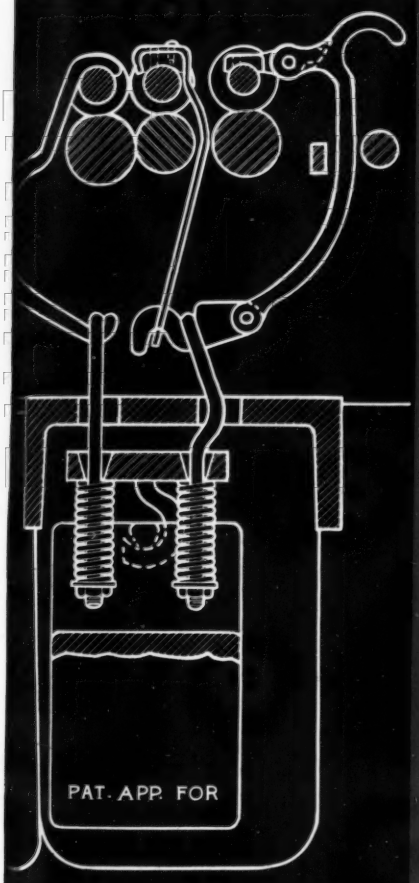
AUGUST, 1937

COTTON

Serving the

TEXTILE INDUSTRIES



MODEL "M" FRAME WITH UNISET WEIGHTING

This improved system has four exclusive features:

1 Constant weight on all lines irrespective of roll setting.

2 Automatic self-adjusting saddles, hooks and stirrups.

3 Predetermined and unvarying weighting on all rolls.

4 Instantaneous weight release on any and all rolls without the use of pinch bars or other tools.

A NEW SACO-LOWELL DEVELOPMENT

THE *Model M* DRAFTING SYSTEM FOR ROVING . . .

An Outstanding Improvement Applicable to Existing Frames — Makes Possible Drafts of 8 with One Inch Cotton — And Proportionately Longer Drafts With Longer Staple.

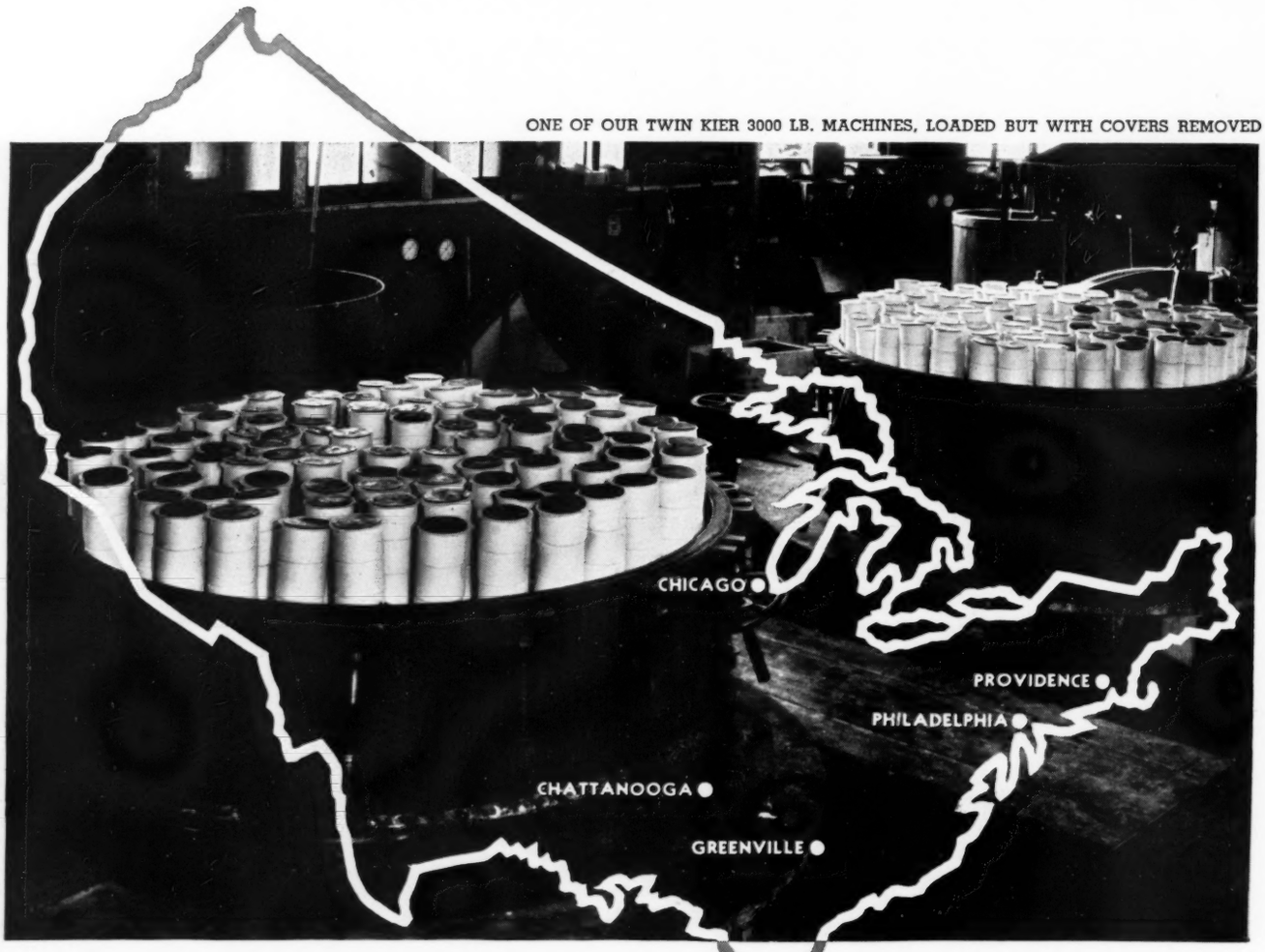
The Model M Drafting System is distinctly a Saco-Lowell development which brings to the textile industry an advanced and greatly improved system for drafting sliver or roving. The improved roll design with Uniset Weighting, the utmost simplicity in construction, has made it possible to greatly increase effective drafts — and without the creation of irregularities.

In many cases the annual savings by this improved system will more than return the original outlay for the new equipment. Please write for bulletin giving complete details on this new Saco-Lowell development.

SEP 13 1937
TECHNICAL DIVISION

SACO-LOWELL SHOPS . .

147 MILK STREET
BOSTON, MASSACHUSETTS



ONE OF OUR TWIN KIER 3000 LB. MACHINES, LOADED BUT WITH COVERS REMOVED

You Do NOT Have to Mix Dye Batches When You Buy Colored Yarns from these Franklin Process Plants

Franklin Process equipment includes the largest package yarn dyeing machines used by any custom yarn dyer in the world. These machines regularly color from 1500 lbs. to 3000 lbs. of yarns in one batch. Such large batches greatly facilitate manufacturing in the mill, because they eliminate the possibility of trouble from mixing yarn of the same color, but dyed in different batches.

Franklin Process plants, strategically located to cover all major textile areas, offer this advantage. The service they render is also uniform in all other important respects; they all dye by the Franklin Process package method; they all use the same formula for a given Franklin Process shade, so that this shade does not have to be always dyed by the same Franklin Process plant to assure a commercially accurate match.

Franklin Process plants also offer uniformly superior color quality as to evenness and penetration due to certain mechanical features characteristic of Franklin Process Package Dyeing. Our representative will be glad to explain on request.

Franklin Process

SPECIALISTS IN PACKAGE DYEING SINCE 1910

Natural Yarns *Colored Yarns* *Glazed Yarns* *Dyeing and Processing Machines*

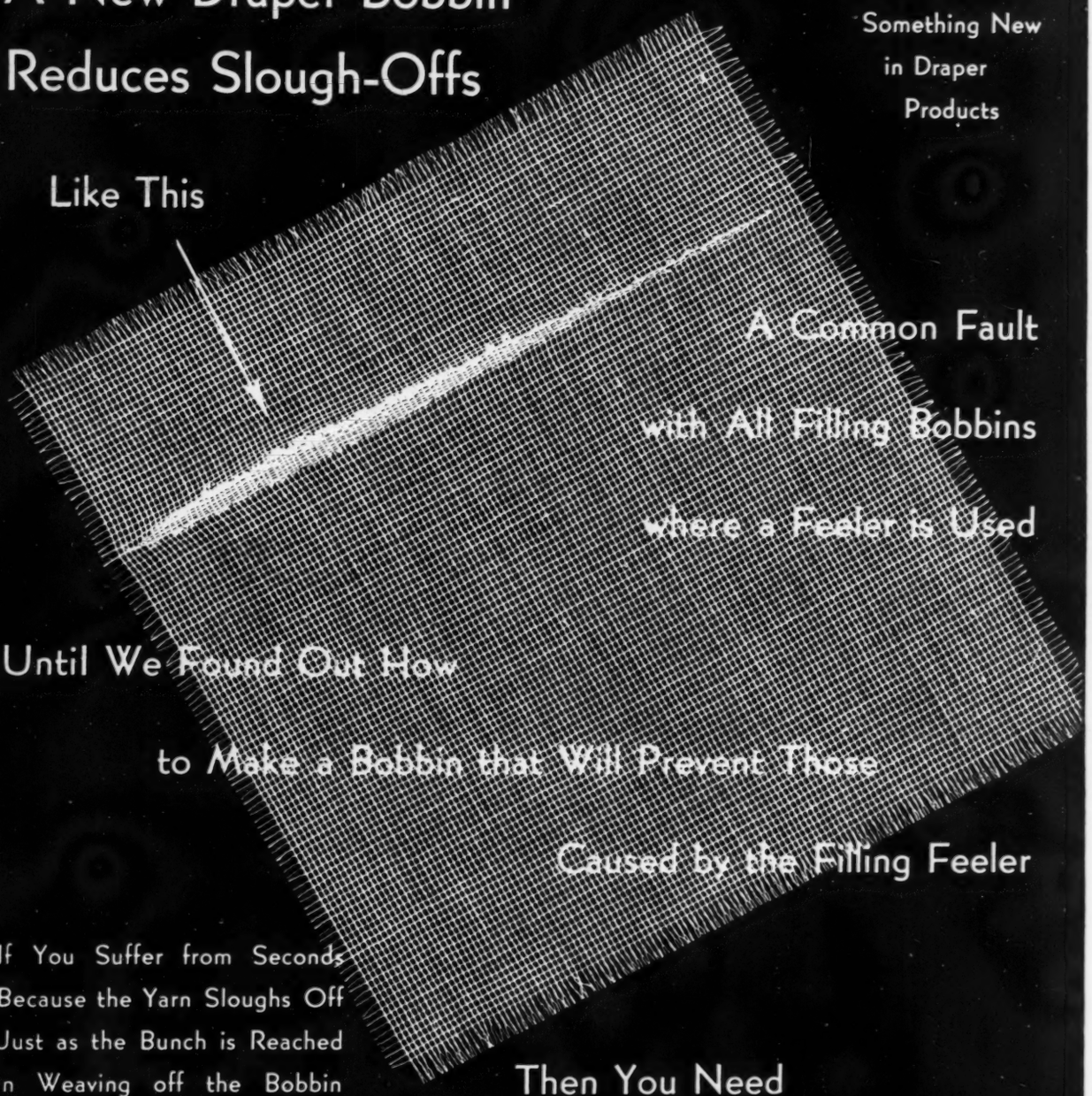
PROVIDENCE · PHILADELPHIA · GREENVILLE · CHATTANOOGA · CHICAGO · N. Y. REPRESENTATIVE, 40 WORTH ST.

COTTON is published monthly by W. R. C. Smith Publishing Company, Dalton and Atlanta, Ga.
Subscription Rates, United States and Possessions, $1.00 for one year; $2.00 for three years; Canada, $1.50 per year; Foreign Countries, $2.00 per year.
Entered as second-class matter at the postoffice, Dalton, Ga., under the Act of March 3, 1879.

A New Draper Bobbin Reduces Slough-Offs

There Is Always Something New in Draper Products

Like This



A Common Fault with All Filling Bobbins where a Feeler is Used

Until We Found Out How to Make a Bobbin that Will Prevent Those Caused by the Filling Feeler

If You Suffer from Seconds Because the Yarn Sloughs Off Just as the Bunch is Reached in Weaving off the Bobbin

Then You Need

The New Draper Bobbin that Reduces Slough-Offs and Makes Old Bobbins as Obsolete as Old Looms

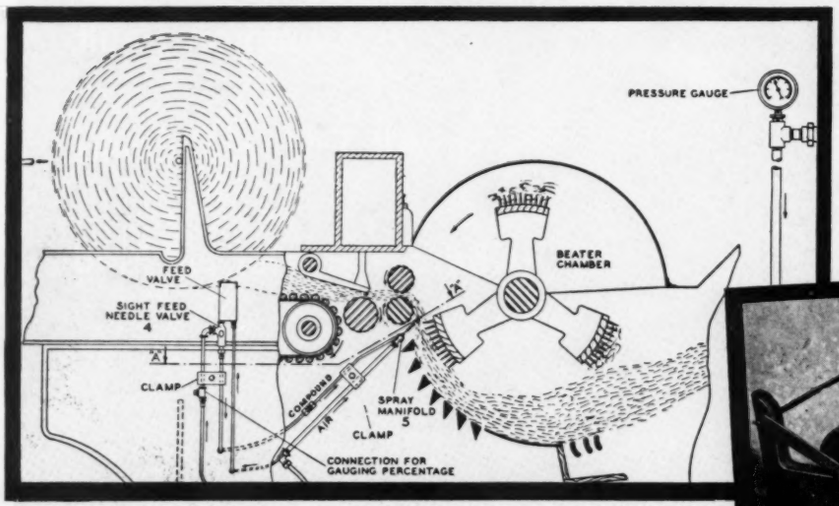
DRAPER CORPORATION

Atlanta Georgia Hopedale Massachusetts Spartanburg S C

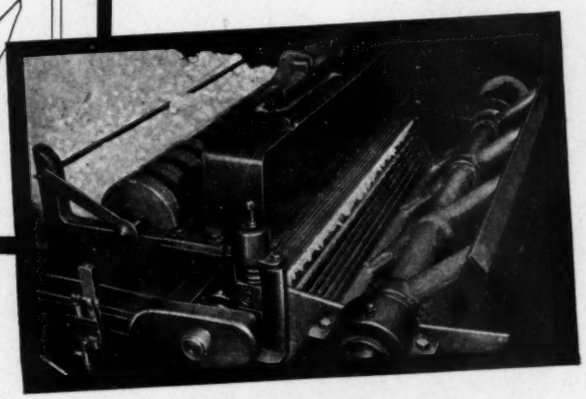
TEXSPRAY

COTTON CONDITIONING

IS *profitable*



Texaco Texspray Compound is sprayed on the cotton as it enters the beater chamber of the picker. Here, the fibres are spread out fan-wise, so that each individual fibre can be thoroughly treated.



YOU will actually save several dollars per day per picker in good usable stock, get more flexible fibres, easier to draft, increase your production, and produce a smoother yarn, when you install the Texspray System of Cotton Conditioning.

In the Texspray System the fibres are sprayed *as they enter the beater chamber* of the picker. This is the one place where thorough and uniform conditioning of each fibre is assured. No other system can accomplish this. This point of application is a distinctive and exclusive feature of the Texspray System.

Uneven distribution causes uneven running of the stock on the cards and on the spinning frames.

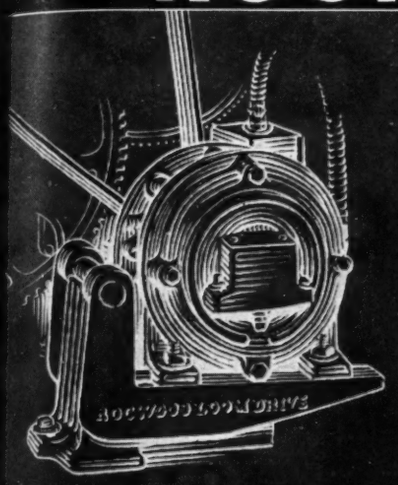
We are prepared to install the Texspray System in cotton manufacturing centers of the United States. Investigate this successful system *now*—write for the free booklet which fully explains the benefits you can enjoy by installing the Texspray System.

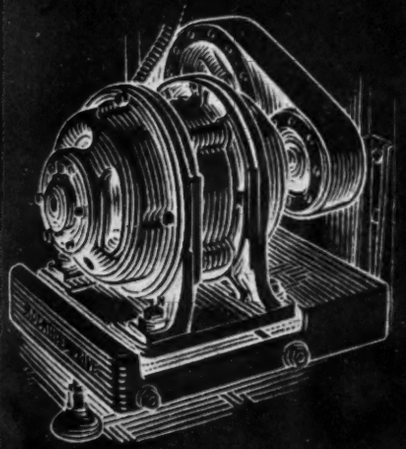
The Texas Company, 135 E. 42nd St., N. Y. C.

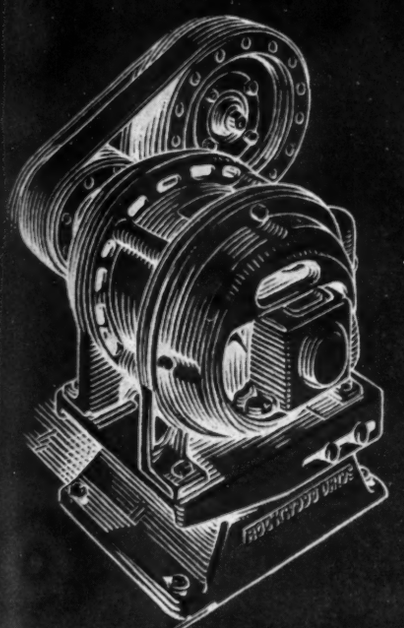
Cotton Conditioning with

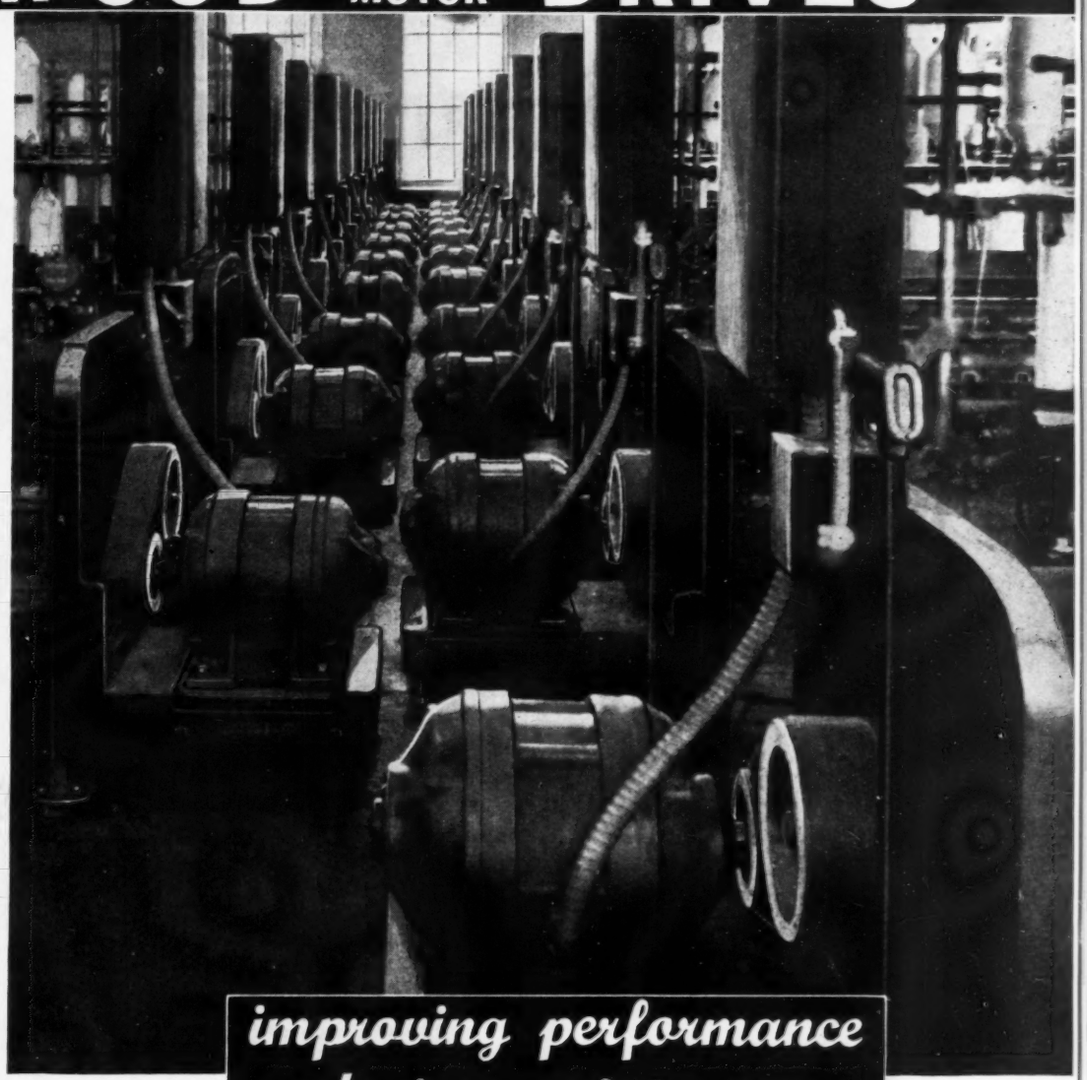
TEXACO TEXSPRAY *Compound*

ROCKWOOD PIVOTED MOTOR DRIVES









improving performance reducing maintenance,

Saco-Lowell Frames Florence Mills, Forest City, North Carolina

Rockwood Drives are definitely superior for cotton mill machinery.

The above Rockwood Drives are at the Florence Mills, Forest City, North Carolina. Clean, neat, off the floor, the shelf-type Rockwood Drive is preferred by many mills. Cotton mills generally consider the Rockwood Drive as an improvement that makes for more satisfactory machine operation and improves the quantity and quality of output. Rockwood Drives are their own maintenance men and their freedom from attention and annoyance has won the preference of engineers, superintendents master mechanics and millwrights.

The Rockwood Drive is unique in its ability to maintain driven machine speeds. Speed counters put on machines before and after installation of Rockwood Drives show a truly remarkable improvement. This is because the pivoted weight of the motor, lightly cradled in the belt, automatically maintains a belt tension that eliminates slip, and keeps the driven pulley speed uniform regardless of local change or change in belt length.

Rockwood Drives for spinning frames are made in four types, two of which are pictured. The Rockwood Loom Drive pictured is inexpensive and a big improvement in loom operation and maintenance. Rockwood Ceiling Type lineshaft Drives are considered an engineering ideal and are a decided improvement for ceiling mounted motors driving lineshafts. Rockwood Standard (floor mounting) Drives have a large number of uses on other textile machines.

Every Rockwood Drive is guaranteed to be satisfactory. Deliveries can be made promptly—to fit any requirement. SPECIFY ROCKWOOD DRIVES FOR YOUR NEW MACHINERY INSTALLATIONS AND DEPARTMENT CHANGEOVERS. No other drive offers so many advantages. Superior performance has earned their reputation "for the first time providing a truly satisfactory short center motor drive for textile machinery." WRITE FOR RECOMMENDATIONS AND PRICES.

ROCKWOOD MANUFACTURING CO., INDIANAPOLIS, IND

THE RIGHT MOVE IS EASY

AMCO Ideal Jr. Humidifier (Below). For medium high capacities. Motor driven fan gives maximum distribution of atomized spray.

AMCO Ideal Humidifier (Above). High capacity, for use where heat and dry air combine to create a high humidity demand.

AMCO No. 4 Atomizer (Above). The first automatically self-cleaning atomizer —both air and water nozzles. Delives smoke-like spray.

AMCO Amtex Humidifier (Left). Arrests all free water, delivers only a smoke-like spray. Designed primarily for laboratory use.

AMCO Humidity Control (Right). Automatically controls humidity within very close limits. Sensitive, reliable. Unaffected by temperature.

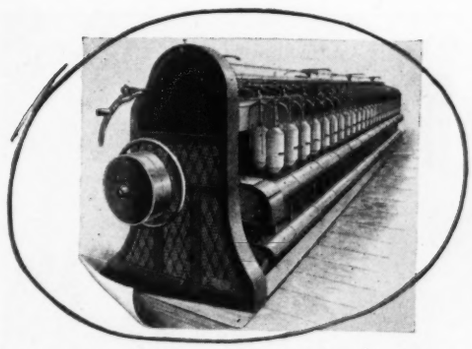
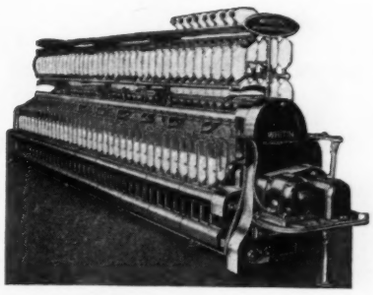
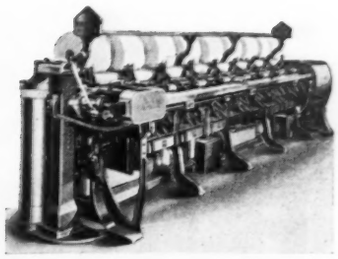
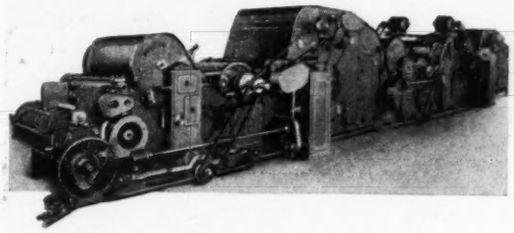
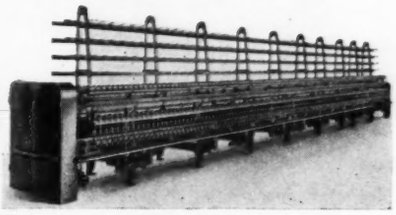
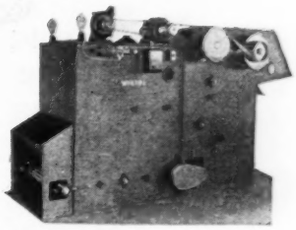
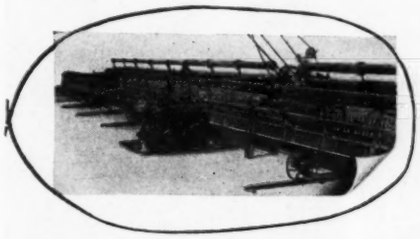
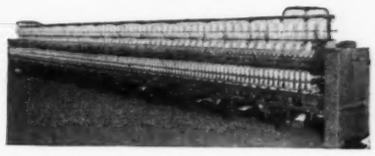
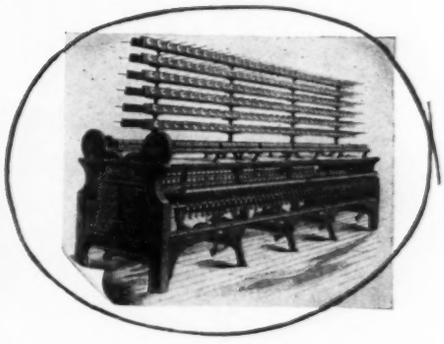
WITH AMCO EQUIPMENT!

The right move to provide correct humidity for any process is the proper use of the proper device. For the Amco engineer, backed by the wide Amco line, it is easy to make the right move **every time.**

Every Amco installation is "tailor-made"; taking into account the many characteristics of the individual mill . . . type of building, ceiling height, exposures, machinery layout, ventilation, type of product. The Amco engineer, schooled by years of process studies of cotton, worsted, woolen, silk and rayon manufacture, draws on the many tools in the wide Amco line for the one device exactly suited to each condition. Always making the "right move," he assures the maintenance of adequate humidity in the operation of every manufacturing process. American Moistening Co., Providence, R. I., Boston, Mass., Atlanta, Ga., Charlotte, N. C.

AMCO HUMIDIFICATION

TAKE YOUR HUMIDIFICATION JOB TO A HUMIDIFICATION SPECIALIST

WEED OUT OBSOLETE MACHINERY

Whitin Machines included in recent revampment programs

WHITIN

- **Long Draft Roving Frames**
- **Long Draft Spinning Frames**
- **One Process Pickers**
- **Drawing Frames**
- **Blending Feeders**
- **Top Flat Cards**
- **Combers**
- **High Speed Twisters**
- **Woolen Cards**
- **Wool Spinning Frames**
- **Worsted Spinning Frames**

While many mills have attempted to breast the tide of rising costs by makeshift changes in equipment, other leading mills have weeded out all obsolete machinery from every one of their yarn processing departments. They have replaced antiquated profit-eating equipment with up-to-date and improved machines.

The list of machines at the left represents a portion of the improved textile equipment recently installed by Whitin. Check them against your own machines. Do you enjoy the benefits now available to mills which are thus equipped.

An incalculable amount of research and development by Whitin engineers in the past few years has resulted in machines of greater production capacity, increased quality of product, and greater operating savings.

Many a successful revampment program had its origin in these diversified Whitin improvements. Our representatives will be glad to discuss these programs with you and to show you how they can most profitably apply to your particular program.

WHITIN MACHINE WORKS

CHARLOTTE, N. C. WHITINSVILLE, MASS. ATLANTA, GA.

BOOST YOUR BATTING AVERAGE

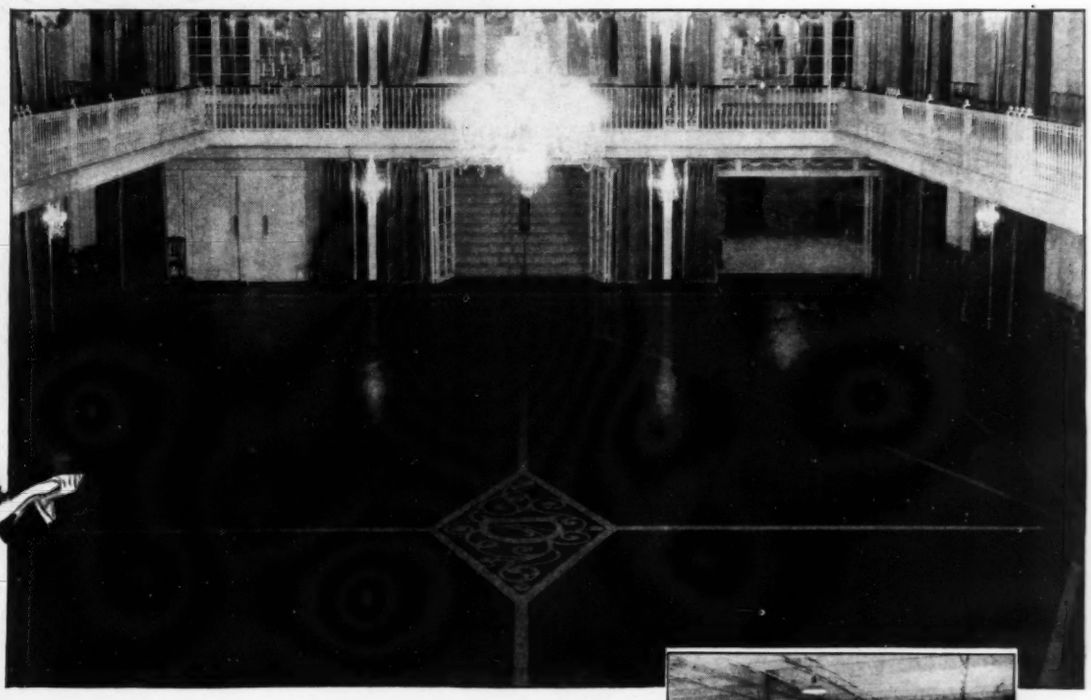
EVERY day more and more manufacturers are becoming Union Special LOCKSTITCH "fans." These machines are making "hits" wherever they're used because they're built to run faster, longer and better with no "errors."

Let us send the LOCKSTITCH "to bat" in your plant and show you how it can "drive home" substantial production increases and cost reductions. Then you'll see why we say: "Boost your batting average with the LOCKSTITCH!" **UNION SPECIAL MACHINE CO., 400 North Franklin Street, Chicago, Illinois**

Do you know . . . about the advanced mechanical features to be found in Union Special LOCKSTITCH machines! We will be glad to send you interesting descriptive bulletin on request.

UNION SPECIAL

Ballrooms like *Textile Mills* know HARD MAPLE as the Longest-Wearing *Comfortable* Floor



If you visit the Main Ballroom at Chicago's Drake Hotel, you'll be struck by the beauty of the ebony-black floor, striped and scrolled in silver. If you dance, you'll be impressed by its velvety "feel" underfoot, so smooth that dancing seems effortless.

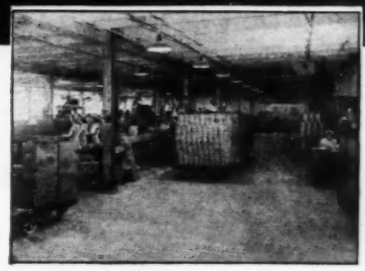
Like most ballroom floors, this floor is Northern Hard Maple, selected for three reasons: its beauty, its resilient smoothness, its remarkably long life.

The same three characteristics, combined so perfectly in no other flooring, explain Hard Maple's widespread use in factories, stores, schools and homes.

On a cost-per-year basis, Hard Maple offers unequalled economy. Outwears any other comfortable floor. So tough-fibred, tight-grained, its resistance to indentation and abrasion is remarkable. Does not splinter, sliver, or develop ridges. Speeds up traffic. Simplifies alterations, lowers maintenance costs.

Moreover, Hard Maple offers unsurpassed comfort in use. Warm, dry, resilient, sanitary, it reduces fatigue, aids efficiency. And always, its light cheery color presents pleasing appearance. With the heavy-duty finishes available, Hard Maple's beauty is maintained under most severe traffic. These penetrating finishes seal its surface, keep out dirt, eliminate scrubbing. In "natural" or colors, to match any decorative scheme.

Before building or remodeling, investigate this most versatile of flooring materials. Consult your architect about **MFMA*** Northern Hard Maple, available in strips or blocks.



No other flooring equals Hard Maple's versatility. In the Drake Ballroom, it offers a perfect floor for dancing; matches its surroundings in beauty. For the Cracker Jack plant, it provides foot comfort, remarkable resistance to the wear of heavy truck traffic.

Bakeries prefer Hard Maple because of its cleanliness, sanitation, resilience, good appearance, easy maintenance, durability, economy. Versatile Hard Maple is the ideal flooring for factories of many different kinds,—as well as mills, warehouses, schools, stores and homes.

MAPLE FLOORING MANUFACTURERS ASSOCIATION
1794 McCormick Building, Chicago, Illinois

See our catalog data in Sweet's, Sec. 17/66.
Write us for folder on Heavy-Duty Finishes.

Floor *with* Maple

MFMA Approved

***MFMA** — This trade-mark on Maple Flooring guarantees that it conforms to the exacting grade standards of the Maple Flooring Manufacturers Association. It protects you against species substitution and inferior grade. It assures you of *genuine* Northern Hard Maple. Look for it on the flooring you buy.

TRADE MARK REG. U.S. PAT. OFF. CANNON

"THE most helpful result of electric power is in the quality of production made possible by the constant, even transmission of power to the spinning and weaving machines. The result of the more even-running machinery is a more uniform fabric, yielding longer life and greater efficiency."

Martex

"THE application of direct-connected motors...has resulted in higher machine speeds with greater unit production. Many electric devices for detecting faults and for automatic operation have made the work load less burdensome for employees."

GENERAL

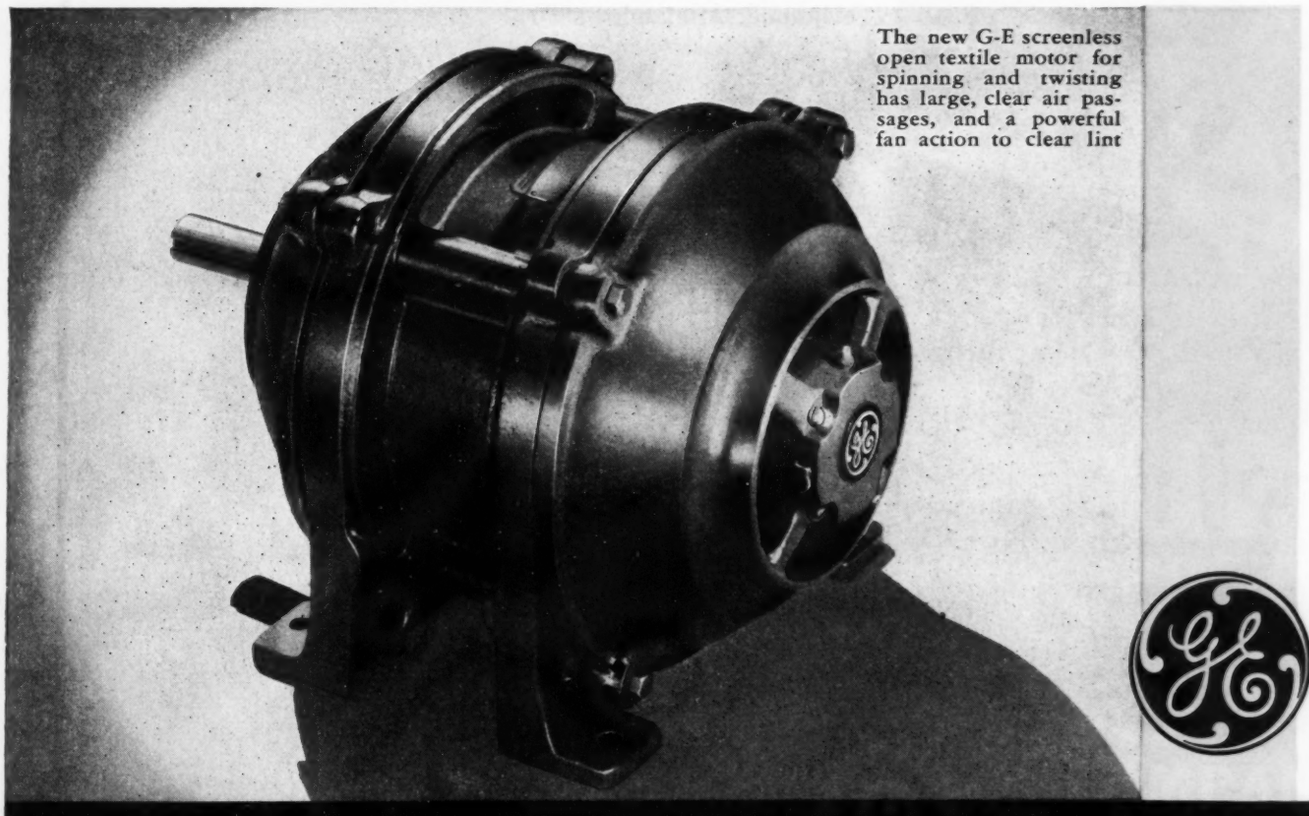
likes big soft towels

TODAY, buying well-made, stylishly colored big bath towels is almost as matter of course as ordering groceries. Yet scarcely more than a generation ago, "turkish" towels were more for display than for use, in the ordinary household.

This development of the bath towel from a luxury to a necessity is, in itself, proof of the progress that has been made in merchandising and manufacturing methods. Today, big soft bath towels are available in more and more styles and sizes. They absorb moisture quickly and easily, and their colors are fast.

In the progress that has made possible more and better towels for more people, General Electric has had a part—it has made available more and more of the benefits of electric power. G-E application engineers have cooperated continually with textile-machinery engineers in effecting improvements.

Consult the nearest G-E office for information on electric apparatus or its application, or write General Electric, Schenectady, N. Y.



The new G-E screenless open textile motor for spinning and twisting has large, clear air passages, and a powerful fan action to clear lint

011-162

E L E C T R I C

L. F. Dommerich & Company

Executive and General Offices

271 MADISON AVENUE
NEW YORK, N. Y.

Telephone: AShland 4-8650

FACTORS

For Manufacturers and Merchants

Inquiries as to our services solicited

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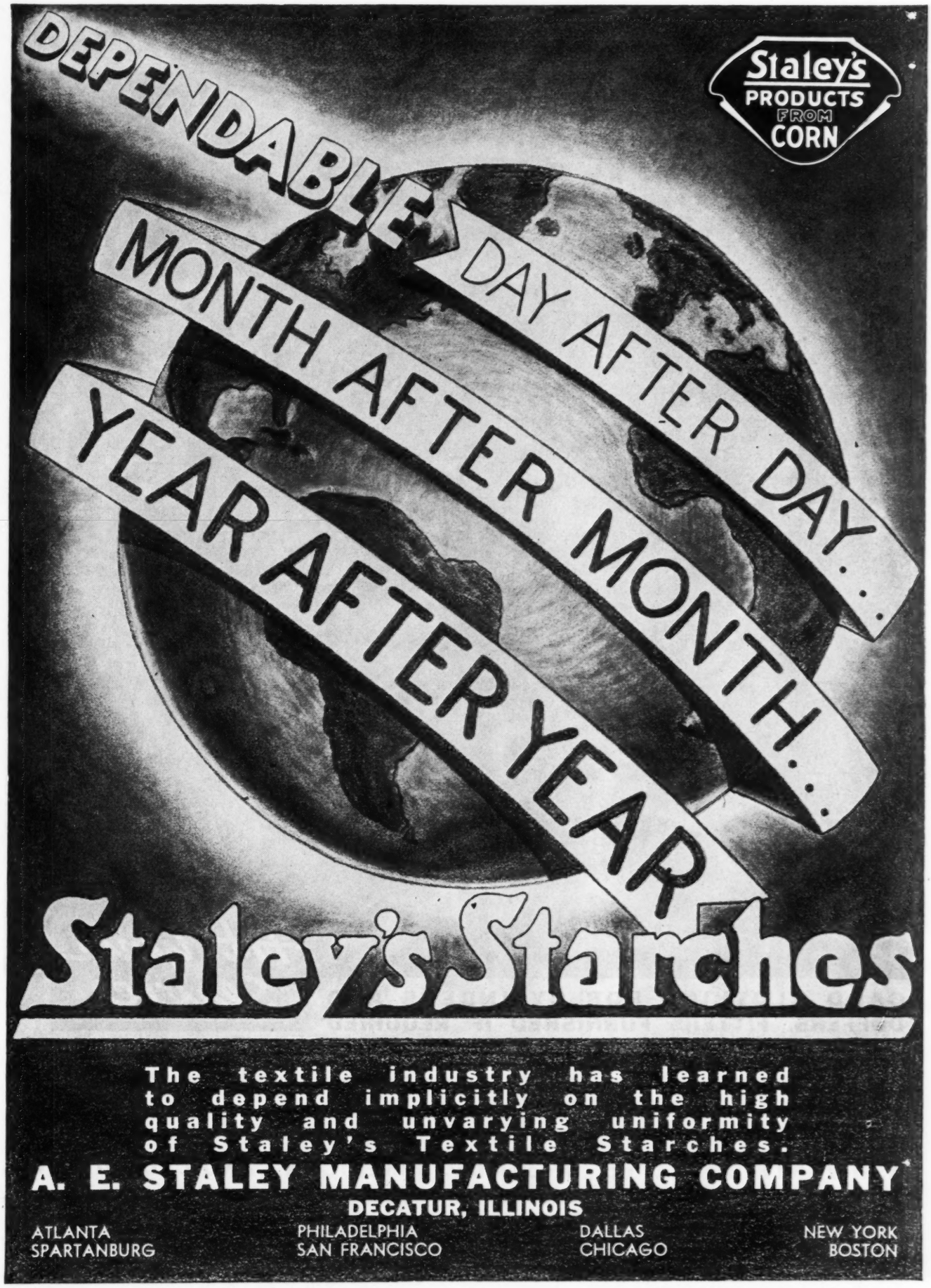
ESTABLISHED 1840


DEPENDABLE
DAY AFTER DAY...
MONTH AFTER MONTH...
YEAR AFTER YEAR
Staley's PRODUCTS FROM CORN
Staley's Starches
The textile industry has learned to depend implicitly on the high quality and unvarying uniformity of Staley's Textile Starches.
A. E. STALEY MANUFACTURING COMPANY
DECATUR, ILLINOIS
ATLANTA
SPARTANBURG
PHILADELPHIA
SAN FRANCISCO
DALLAS
CHICAGO
NEW YORK
BOSTON

Ashworth
PIONEERS IN CARD CLOTHING

At your Service

CARD CLOTHING FOR CYLINDERS AND DOFFERS. FITTERS FURNISHED IF REQUIRED

We maintain at all our plants a stock of card clothing of standard counts and foundations. Furthermore, in cases where mills are not equipped to clothe their cards themselves, we can furnish expert fitters and suitable machinery for the purpose.

We would welcome an opportunity to consult with you on your card clothing problems.

ASHWORTH BROS., Inc., Woolen Div., AMERICAN CARD CLOTHING CO.

FACTORIES in Fall River, Worcester and Philadelphia; SALES OFFICES AND REPAIR SHOPS in Charlotte, Atlanta and Greenville; SOUTHWESTERN REPRESENTATIVE: Textile Supply Company, Dallas, Texas.

PRODUCTS AND SERVICES: Card Clothing for Cotton, Wool, Worsted, Silk and Asbestos Cards and for All Types of Napping Machinery . . Brusher Clothing and Card Clothing for Special Purposes . . Lickerin Wire and Garnet Wire . . Sole Distributors for Platt's Metallic Wire . . Lickerins and Top Flats Reclothed at All Plants.

for water repellency

WATERPROOF W-559

WATERPROOF W-559 makes a stable milky emulsion which gives exceptional results on all fibres—cotton, wool, rayon or silk.

For spot, rain, splash or shower-proofing—in a single bath process—Waterproof W-559 meets the most rigid requirements. Discard the two-bath method—save time—and be assured of better and more consistent results.

Waterproof W-559 is a finely adjusted product which will remain stable for an extended period. In liquid form it is easy to dilute and convenient to handle.

FOR COTTON PRINTERS:

STEAM BLACK S-193 A
for a full violet shade of black

STEAM BLACK H. P. JET
for a deep jet black

For smooth, unmottled printed effects:

ALIZARENE YELLOW R
for reddish orange shades

ALIZARENE YELLOW G. N.
for a fast lemon shade

JACQUES WOLF & CO.

MANUFACTURING CHEMISTS AND IMPORTERS . . . PASSAIC, NEW JERSEY
Warehouses: **Providence, R. I.; Philadelphia, Pa.; Utica, N.Y.; Chicago, Ill.; Greenville, S. C.; Chattanooga, Tenn.**

The heddle with the "Certified" tag is now in first place for corrosion resistance of plating . . . positive assurance to you of long, smooth life for the entire heddle . . . and smoother weaving.

Several months ago Emmons made public the corrosion resistance test conducted by Pittsburgh Testing Laboratory as part of the regular independent check upon manufacturing quality. P. T. L. discovered that Emmons cadmium-plated Heddles withstood *168 hours* of destructive salt spray without rusting. Then comparative tests were made with three other competing brands, samples of which were purchased in the open market.

The results for the last three months show Emmons cadmium-plated Heddles to have made the following position in competitive tests:

1st month — Second Place
2nd month — First Place
This month — First Place

Better plating means a longer life — and a *smoother* life — for the heddle . . . resulting in better weaving, less chafing — freer warp movement — *fewer* heddle replacements.

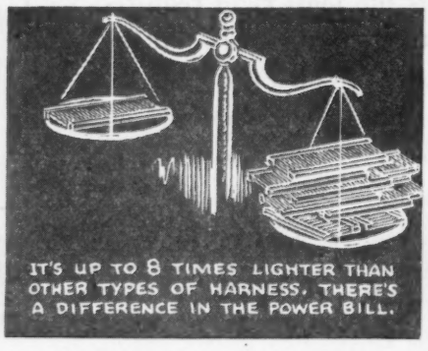
Emmons heddles are "Certified." They are your logical buy. We invite your order. Emmons Loom Harness Company, Lawrence, Mass.

Emmons

"CERTIFIED" STEEL HEDDLES

CHAFELESS . . LIGHT-WEIGHT . . LONG-LIVING EMMONS "CHAFELESS CORD" COTTON HARNESS

"CHAFELESS CORD" COTTON HARNESS WON'T ROUGH YARN. YOU'LL FIND LESS "FLY" UNDERNEATH THE LOOM


IT'S UP TO 8 TIMES LIGHTER THAN OTHER TYPES OF HARNESS. THERE'S A DIFFERENCE IN THE POWER BILL.

IT'S BUILT FOR LONG-WEAR - LONG STAPLE COTTON, 5 COATS OF VARNISH - HUMIDITY-PROOF DRESSING.

"CERTIFIED" STEEL HEDDLES, "MULTIPLIED YARN SPACE" REEDS, "CHAFELESS CORD" COTTON HARNESS — described in Textile World Yearbook

6688

GRASSELLI FORMIC ACID

—is the modern answer to

BETTER DYEING
BRIGHTER SHADES
MORE LEVEL COLOR

LET US ALSO QUOTE YOU ON

Acetic Acid
Acetate of Soda
Acetate of Lead
Alums
Aqua Ammonia
Barium Chloride
Bi-Chromate of Soda
Bi-Sulphate of Soda
Bi-Sulphite of Soda
Carbonate of Soda
Caustic Soda, Solid and Flake
Chloride of Lime
Chloride of Zinc
Epsom Salts
Glauber's Salt
Lactic Acid
Muriatic Acid
Nitric Acid
Oxalic Acid
Phosphate of Soda
Silicate of Soda
Sulphate of Soda, Anhydrous
Sulphite of Soda
Sulphide of Soda
Sulphuric Acid
Tri-Sodium Phosphate

GRASSELLI FORMIC ACID, added to the dyebath, produces colors that are brighter and more brilliant in shade, without streaks or clouds and perfectly level, even in cross dyeing.

Textile manufacturers will find that *Grasselli Formic Acid*, 85% and 90%, is always uniform in quality—always crystal clear—never darkening when exposed to light. It is both an acid and an aldehyde, therefore, it produces results not obtainable in other acids.

It will not tender the most delicate fabrics, yet has the efficient strength to almost completely exhaust the dyebath.

Selecting *"Grasselli Grade"* is your assurance of quality and uniformity in formic acid. Write, phone or wire our nearest office.

E. I. DU PONT DE NEMOURS & COMPANY, INC.
DU PONT REG. U.S. PAT. OFF.
GRASSELLI CHEMICALS DEPARTMENT
WILMINGTON, DELAWARE
GRASSELLI

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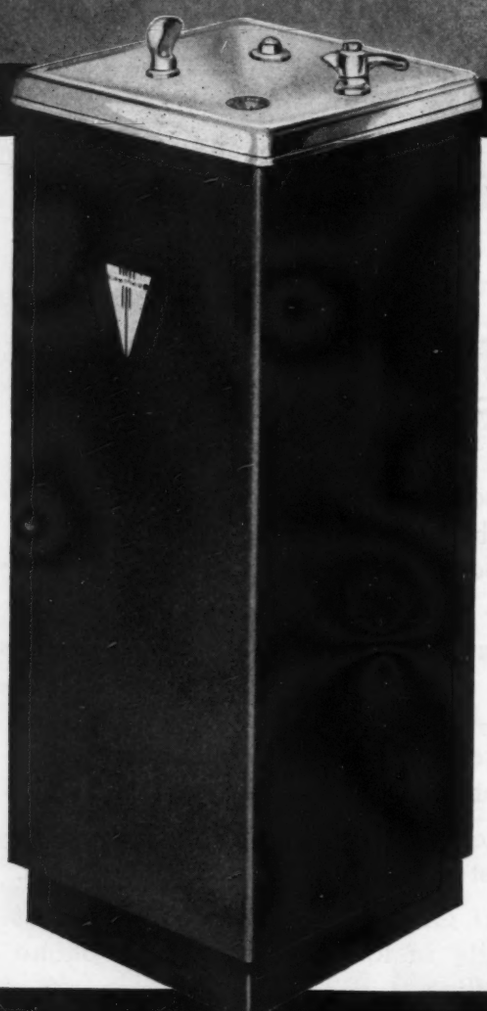
San Francisco, 584 Mission Street Los Angeles, 2260 E. 15th Street
Represented in Canada by CANADIAN INDUSTRIES, LTD., General Chemicals Division, Montreal and Toronto

FREEZE-PROOF!
EXPLOSION-PROOF!



YES, there's a special Westinghouse Water Cooler for service where ordinary coolers would freeze up and burst. And another special explosion-proof model with all electrical mechanism safely sealed away from explosive gases, vapors or dust.

These special models are added proof that Westinghouse knows the water cooling business, provides equipment to meet *your* requirements, no matter how exacting they may be. Here are a few of the sound engineering reasons:

Hermetically-sealed units . . . lifetime lubrication
Air-cooled or water-cooled mechanism
Freon refrigerant . . . temperature selectors
Non-clogging drains . . . sanitary bubblers
Improved dual-action evaporators
Brushless motors that don't burn out
Westinghouse 5-year Protection Plan

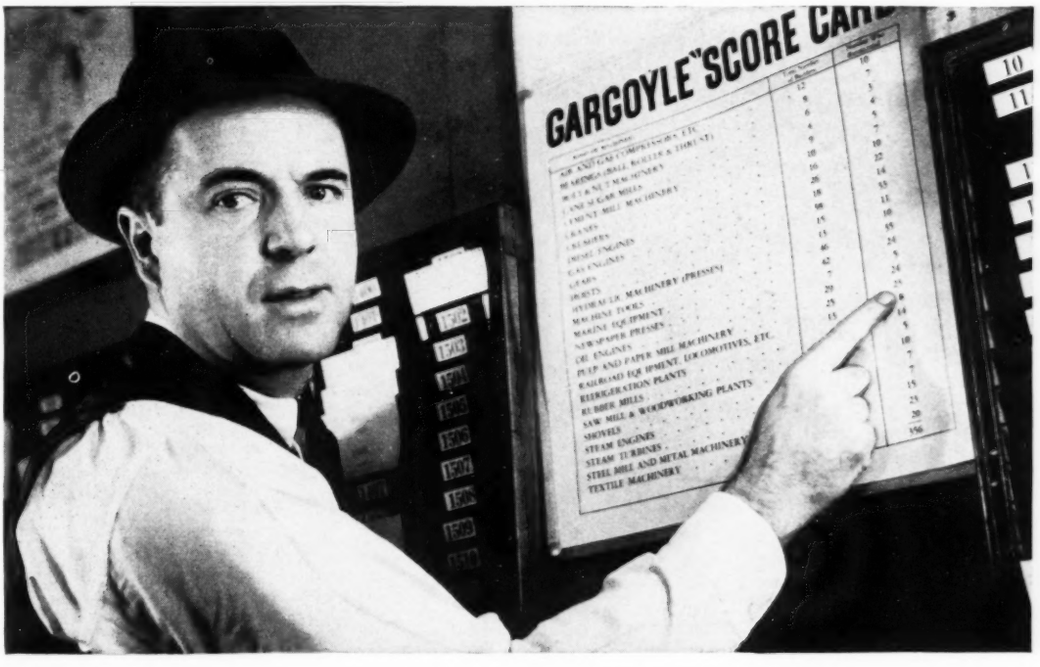
For the most trustworthy, the most economical water cooling equipment to meet your exact needs, see your local dealer, or write to Department 750, Westinghouse Electric & Manufacturing Company, Mansfield, Ohio.

Westinghouse *Hermetically-Sealed* WATER COOLERS

REMEMBER... WESTINGHOUSE GIVES YOU BOTH HERMETICALLY-SEALED UNITS AND THE 5-YEAR PROTECTION PLAN

ONLY OIL IN THE WORLD THAT CARRIES THIS OKAY...

Approved or Recommended by 80% of all Machinery Builders...



IT IS EXTREMELY significant that with all the good lubricants available today, only Gargoyle Lubricants carry the recommendation and approval of 80% of this country's leading machine builders.

Here's assurance of quality and lubricating efficiency that protects capital investments... makes machines work better and produce faster... reduces friction and power loads... curbs maintenance and "idle" time... lowers annual cost of plant lubrication.

Hundreds of thousands of machinery users, in 110 different industries, agree that on matters of lubrication the word of the machine builder is important. That's why it may be profitable for your capable plant staffs and Socony-Vacuum engineers to work together ... solving individual operating problems... gaining increased manufacturing profits easily measured in dollars and cents.

SOCONY-VACUUM
INDUSTRIAL LUBRICATION

GARGOYLE Lubricants

SAVES MONEY FOR INDUSTRY

Read what 71 Years' Lubricating Experience...the Greatest in the Oil Business...can do for You. See Next Page.

THIS MARKETING POLICY MEANS "CORRECT LUBRICATION" FOR EVERY TYPE OF PLANT

INDUSTRY ALMOST ALWAYS FINDS that the controlled use of high-grade Gargoyle Lubricants pays for itself many times over and that they actually cost less to use than ordinary lubricants.

But, for such equipment as does not justify the highest-grade lubricants, Socony-Vacuum Engineers will always recommend a lower-priced lubricant when consistent with true economy.

Socony-Vacuum, with a complete line of products, can supply the lubricants best fitted for the requirements of the individual lubricating job as determined by specific operating conditions.

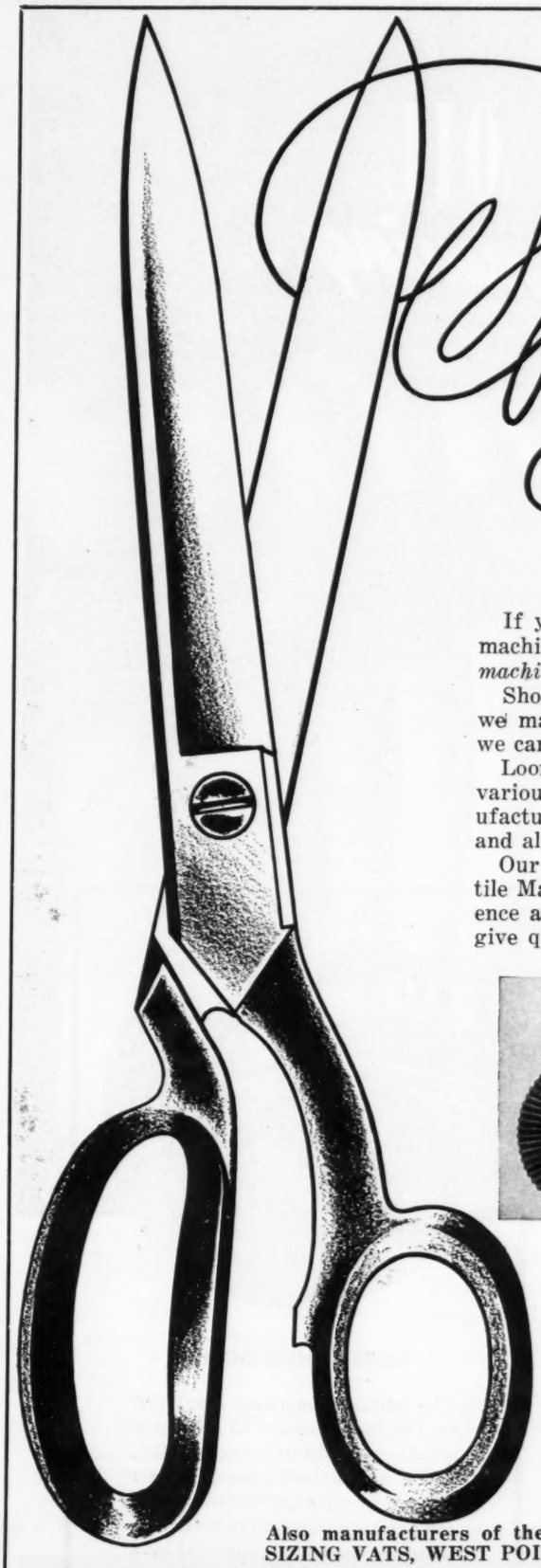
Socony-Vacuum Engineers bring you years of world-wide experience and direct cooperation with manufacturers of equipment. Lubrication Profit is the inevitable result.

SEND FOR THE SOCONY-VACUUM REPRESENTATIVE: *The services of a trained Socony-Vacuum Engineer are available at all times in helping your men to solve lubrication problems.*

SOCONY-VACUUM OIL CO.
INCORPORATED

STANDARD OIL OF NEW YORK DIVISION · WHITE STAR DIVISION · LUBRITE DIVISION · WHITE EAGLE DIVISION
WADHAMS OIL COMPANY · MAGNOLIA PETROLEUM COMPANY · GENERAL PETROLEUM CORPORATION OF CALIFORNIA

GARGOYLE
Lubricants



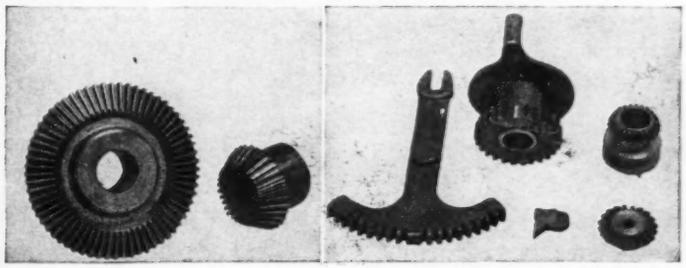
Tailor made Parts and Equipment

If you need anything special to supplant a worn section of a machine or increase its efficiency, *or if you want an entire new machine*, we can "tailor make" it for you.

Should a standard part or a gear of a textile machine break, we may have it in stock ready to be shipped at once. If not, we can make a new one in a very short time.

Loom parts, spinning frame parts, pump parts, card parts, and various other miscellaneous parts for textile machinery are manufactured by us from iron, steel, brass, bronze and other metals and alloys.

Our plant may be properly termed "A Service Station for Textile Machinery." With our splendid facilities, equipment, experience and large stock of patterns, we are in excellent position to give quick and satisfying service.



SPECIAL MACHINERY MADE FOR EXCLUSIVE USE

You may have need for special machinery or parts. We can help you perfect and produce them for your exclusive use, as we have for a number of other mills. Our Engineering Department can furnish designs of our own or work out yours.

"Nothing too large or perplexing; nothing too small or intricate."

Also manufacturers of the WEST POINT SPIRAL GEARS, WEST POINT SIZING VATS, WEST POINT LOOM BEAMS, and other textile machinery.

WEST POINT FOUNDRY & MACHINE CO.

(Batson-Cook Company, Owners)

WEST POINT, GEORGIA

GULFGEM OIL

keeps them humming...

GULF INDUSTRIAL LUBRICATION

...with lower costs!

BUSY DAYS in textile mills mean opportunities for profit — *if* high plant efficiency can be maintained.

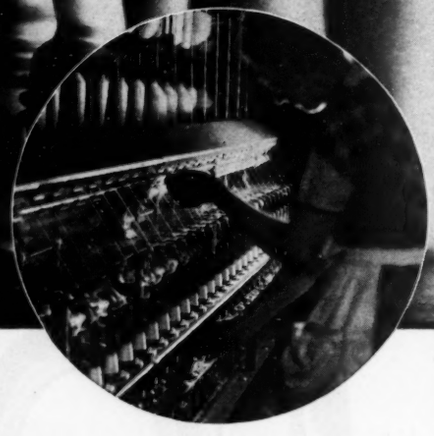
Gulfgem Oil is making a real contribution to efficient operation of spindle frames in many mills. This quality oil, refined by Gulf's exclusive ALCHLOR process, possesses highest resistance to oxidation and gumming. Friction drag in spindles — from these causes — is minimized, and power consumption is kept at low levels. Fewer repairs are needed and over-all operation of spindle frames is improved when Gulfgem Oil is used.

Talk with a Gulf representative about the use of this quality oil in *your* plant.

Gulf Oil Corporation • Gulf Refining Company

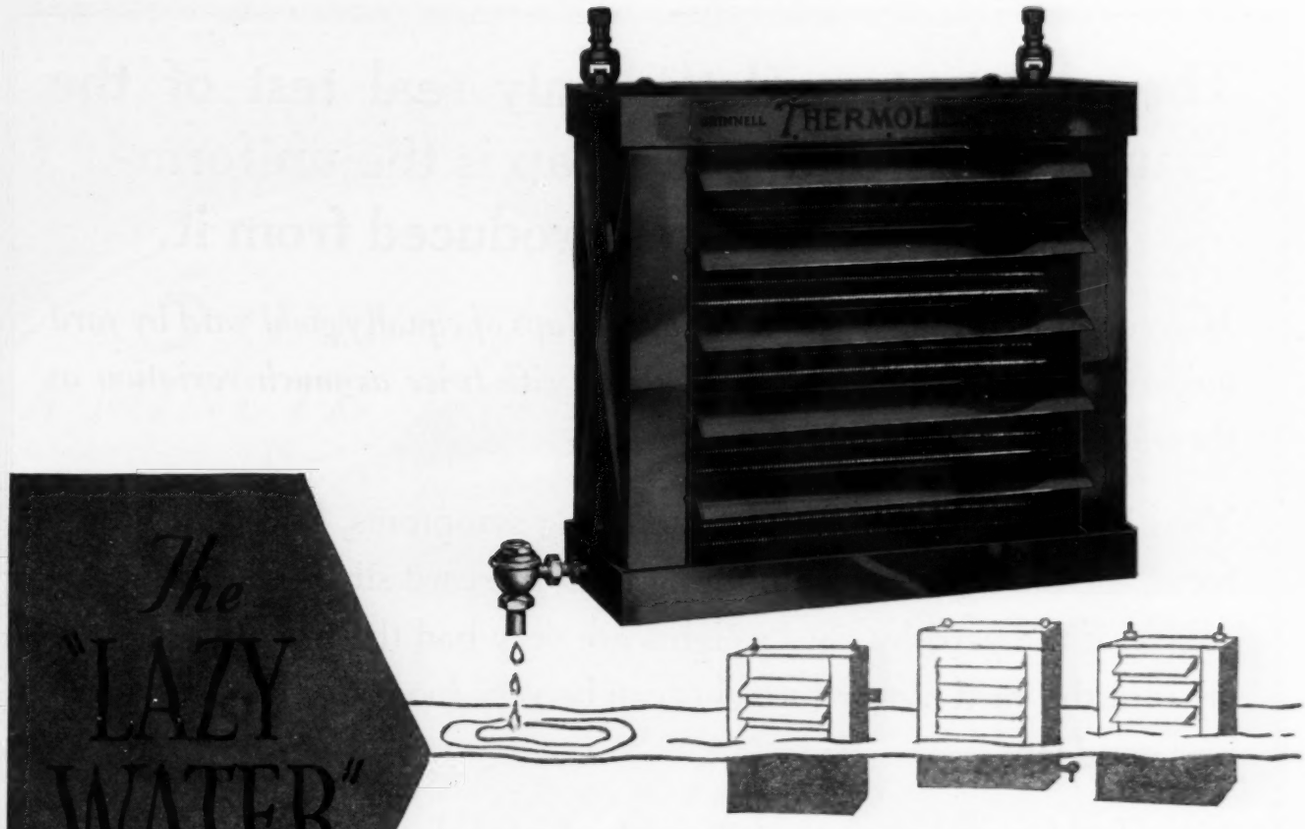
General Offices: Gulf Building, Pittsburgh, Pa.

MAKERS OF GULF NO-NOX ETHYL GASOLINE AND GULFPRIDE OIL

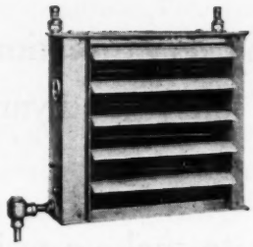


FEWER ENDS DOWN

The advanced methods employed in the manufacture of Gulfgem produces an oil of great stability, an oil which undergoes minimum change in viscosity — either from temperature variation or from oxidation — insuring a constant load and smooth operation at all times. This results in fewer breaks and ends down, an important contribution to the efficient operation of a spinning frame.



The "LAZY WATER" LINE IS THE DANGER LINE!



LOW COST HEAT

Owners Report Savings Up To 28% When Thermoliers Replace Other Types Of Heating Systems.

• •

Shown, top of page, Thermolier Industrial Type. Above, Thermolier Factory Type.

Draw a line through a unit heater, marking the top of the "lazy water"—collected condensation—that partly fills it. You've drawn the "lazy water" line—you've marked the *danger line* of unit heater efficiency.

That line always passes *underneath* a Grinnell Thermolier! For Thermolier's positive built-in drainage, Thermolier's exclusive Internal Cooling Leg mean *no lazy water can collect in a Thermolier! Continuous* removal of condensation keeps *all* of the heater working, *all* of the time.

That is only one of Thermolier's 14 points of superiority. But it's important enough so that, before buying any unit heater, you should find out what provision is made for removal of "lazy water." Learn more about this better way toward better heating! Write to-day for the free Thermolier Data Book. Grinnell Co., Inc., Executive offices, Providence, R. I., Branch offices in principal cities.

GRINNELL THERMOLIER

THE UNIT HEATER WITH 14 POINTS OF SUPERIORITY

The real test, and the only real test of the uniformity of a picker lap is the uniformity of the card sliver produced from it.

Many careful tests have shown that of two laps of equally good yard by yard uniformity, one will produce card sliver with twice as much variation as the other.

Yard by yard lap weights are interesting symptoms, but if fairly uniform, these weights prove nothing until the card sliver is tested. Of course, if the yard by yard weights are very bad the lap is not a good lap, but the yard by yard weights can be *very good* and the lap still not be a good lap.

A yard of lap makes about 100 yards of card sliver. *Did anyone ever test card sliver with a 100-yard weighing?*

A 14½-oz. yard of lap will make about 3,000 yards of 4.00 hank roving. *What would happen to a Boss Carder who tested a 3,000-yard weighing of roving?*

An even lap must be even internally throughout and in every direction. It is not enough that the average of lumps and holes be fairly good yard by yard.

Our experience has convinced us that it is impossible to make a well-distributed lap directly from loose cotton. The fact that so many mills have had us Synchronize their loose cotton single process lappers, with greatly improved results, makes us believe that we are right.

AldricH MachinE

Greenwood, **WorkS** South Carolina

300 Times an Hour

OPEN, shut—open, shut. Ceaselessly, valves are opened and shut in a special "torture machine" at the Crane laboratories. Five times a minute . . . 300 times an hour . . . 2,400 times every eight-hour shift, until the stem gives up its life and the "post-mortem" adds to the vast body of Crane knowledge of valves.

Engineers tabulate the results and study the thread profiles and thread clearances of the valves when finally they are worn out. From this comes definite information showing how to make good valves better . . . and better valves the best for their type of service.

Crane has tested to destruction thousands of valves, seeking information with which to build still better valves. Crane meets the challenge of "new" valve problems with solutions based on 82 years of valve and piping experience. Look in your new Crane No. 52 Catalog for the details regarding 38,000 items, tested in the laboratory and proved on the job. Use it whenever you need valves, fittings, pipe or accessories. CranEquip for satisfaction.

CRANE

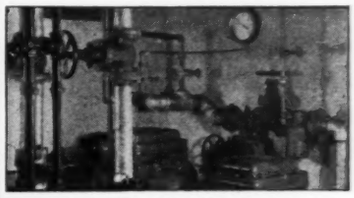
CRANE CO., GENERAL OFFICES: 836 S. MICHIGAN AVENUE, CHICAGO, ILL.

Branches and Sales Offices in One Hundred and Sixty Cities

VALVES, FITTINGS, FABRICATED PIPE, PUMPS, PLUMBING AND HEATING MATERIAL

plied in the next few days.

BUY SMALL VALVES CAREFULLY, SAYS EXPERT



ATLANTA, GA., July 16—The drought of 1936 forced many textile mills to build auxiliary power plants for service should hydro electric power fail. "In these power plants, as on all service and process lines in textile mills, small valves should be specified as carefully as large ones," according to a mill expert.

"The original cost of a small valve is so little, or the leakage from one small valve may seem so small that it is easy to overlook the large losses over a year that come from replacing many small valves or having a large number of small leaks," he continued.

Crane has always recognized the importance of doing small things well. The testing of small valves to destruction in a machine that opens and shuts them continuously under service loads is one illustration of Crane care in providing highest quality at low cost in small valves.

The results of these tests are reflected in better threads, better stems, better body and seat materials. When next you need small valves, specify Crane. Check up, for example, on the number of spots where the Crane No. 7 line of valves can serve you. Sizes from ⅛ to 3 inches, globe and angle, screwed or flanged, Slip-On Disc Holder for quick and easy replacement, discs of various types for various services. See page 16 of your Crane No. 52 Catalog for details. CranEquip for piping satisfaction.

Fine finishes FOR *Fine fabrics*

THE quality of the cloth you sell depends upon the quality of the finish as well as upon the skill and care with which it is woven. So why tempt trouble when it is so easy and economical to be *sure*—by choosing from the AVITEX line of finishes?

It costs no more to use the AVITEX finishes to produce a soft, full finish; a full, glossy finish; or a rich, silky sheen. There is a grade especially designed for every type of fabric.

Write to our nearest office for further information or technical assistance.

DU PONT
REG. U. S. PAT. OFF.

AVITEX
REG. U. S. PAT. OFF.

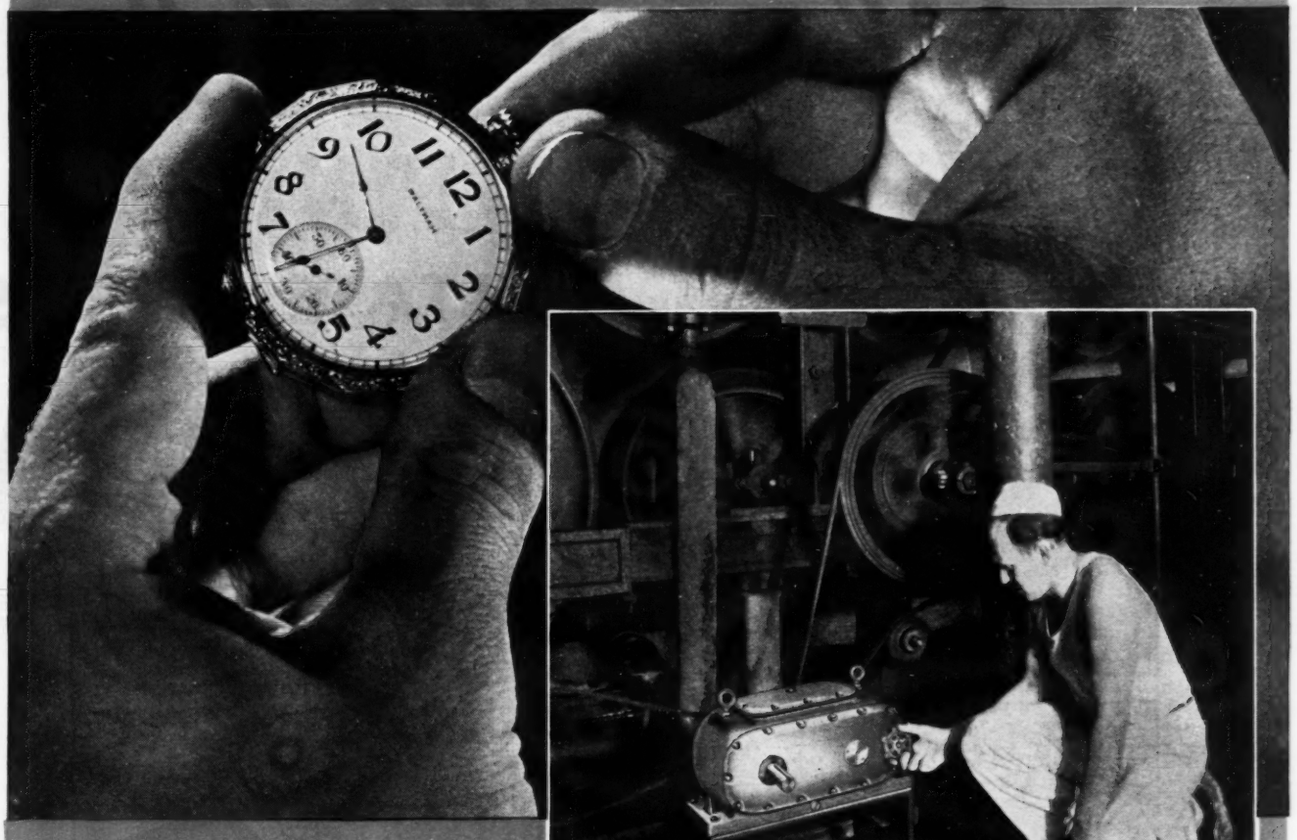
TEXTILE FINISHING AGENTS

E. I. DU PONT DE NEMOURS & CO., INC., FINE CHEMICALS DIVISION, WILMINGTON, DELAWARE

SALES OFFICES:

Boston, Mass., Charlotte, N. C., Chicago, Ill., New York, N. Y., Philadelphia, Pa., Providence, R. I. and San Francisco, Calif.
Represented in Canada by Canadian Industries Limited, Box 1260, Montreal, Quebec, and 372 Bay Street, Toronto, Ontario.

THE WAY YOU SET YOUR WATCH . . .



. . IS THE WAY YOU SET YOUR ★ P.I.V. FOR POSITIVE, VARIABLE SPEED CONTROL

● At the turn of a handle the Link-Belt P. I.V. Gear places at your command an infinite variation of speeds (within predetermined limits) which can be made and maintained with micrometer exactness.

Driven by a positive chain drive, the P. I.V. Gear cannot slip — it transmits every revolution of the motor — assuring accuracy under all conditions of speed, atmosphere and material worked. Compact, durable, running in oil, of all-metal construction, it gives trouble-free, dependable service — greatly increases the versatility of the machine to which it is applied.

Send for a copy of special Book No. 1574. Address nearest office.

★ *Positive Infinitely Variable Speed Control*

LINK-BELT COMPANY 7099A

The Leading Manufacturer of Positive Power Transmitting Equipment

PHILADELPHIA INDIANAPOLIS CHICAGO ATLANTA SAN FRANCISCO TORONTO

Baltimore, Boston, Buffalo, Cleveland, Dallas, Denver, Detroit, Grand Rapids, Kansas City, Mo., Los Angeles, Louisville, Minneapolis, New Orleans, New York, Oakland, Calif., Pittsburgh, Portland, Ore., Seattle, St. Louis, St. Paul. Wilkes-Barre, Montreal, Vancouver.

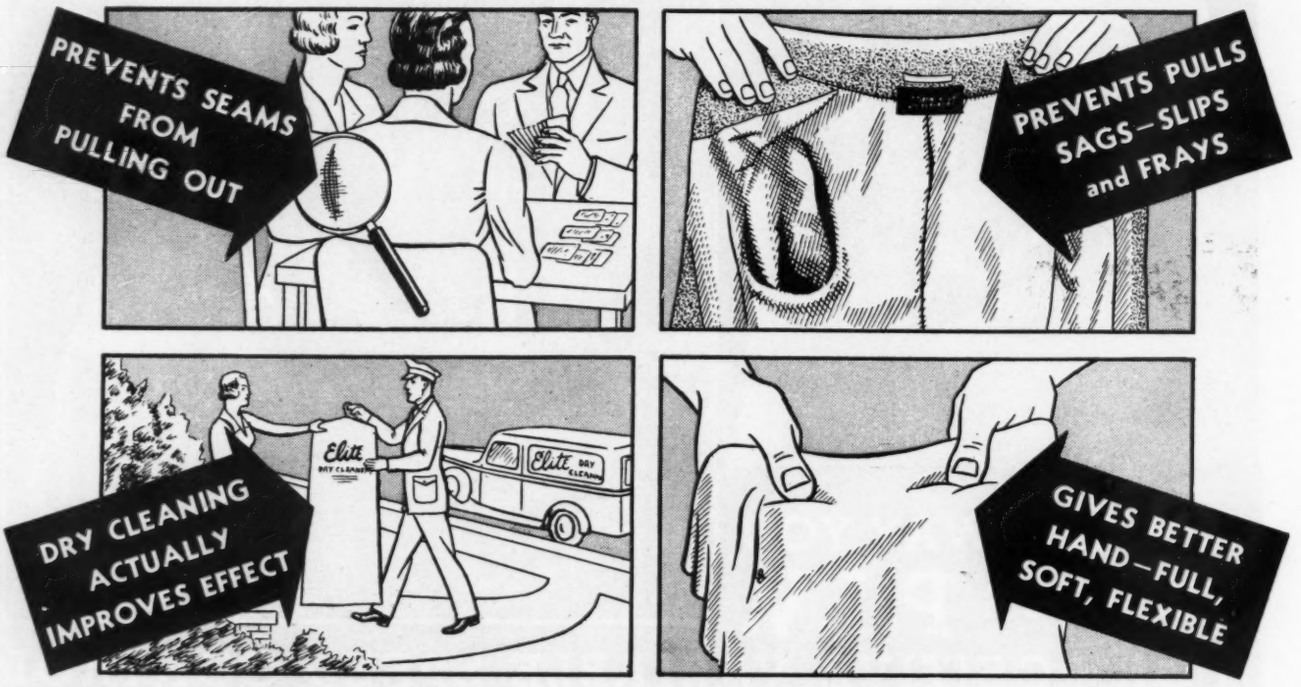
LINK-BELT PIV GEAR

Onyx Chemists' Answer to Today's Big Demand!

Fiba-Weld

SLIP-PROOF FINISH

for SILK, RAYON and ACETATE FABRICS


PREVENTS SEAMS FROM PULLING OUT
PREVENTS PULLS SAGS—SLIPS and FRAYS
DRY CLEANING ACTUALLY IMPROVES EFFECT
GIVES BETTER HAND—FULL, SOFT, FLEXIBLE

Double Duty!

FIBA-WELD *combines Effective Slip-proofing and Finest Finish!*

The big news in Silk, Rayon and Acetate promotions is "*slip-proofing*," to set the fibres permanently against slipping, sagging and fraying, or pulling apart at the seams.

And the best news for finishers is Onyx FIBA-WELD Finish to achieve this effect in the highest degree. FIBA-WELD provides slip-proofing . . . plus a beautiful, soft, flexible texture and full, silky hand.

Important to dress goods and linings, FIBA-WELD may be dry cleaned repeatedly, each cleaning actually improving the effect. It withstands several washings. Shrinking and stretching are minimized.

Meet this demand for slip-proofing with FIBA-WELD and produce better looking, more serviceable fabrics. Write in detail, mentioning type of fabric, etc., for further information. Technical representatives will discuss, or demonstrate, on request.

Onyx

Onyx Oil & Chemical Co., Jersey City, N. J.

Specialists on Finishing Materials

New England Office: 100 Fountain St., Providence, R. I.
Midw. Repr.: Maher Color & Chemical Co., Inc., Chicago
Southern Repr.: E. W. Klumph, Charlotte, N. C.

the original

ROTATING TRAVERSE

The United States Circuit Court of Appeals of the First District has affirmed the decree of the United States District Court holding U. S. Letters Patent No. 1,749,355 for Universal Rotary Traverse valid and infringed by Foster Machine Company's Rotary Traverse used on their No. 103 machine.

THESE ARE SOME OF THE ADVANTAGES OF THE ROTATING TRAVERSE ON THE ROTO-CONER

One-Piece Driving Drum and Traverse Guide. The helical groove directs the yarn while the drum drives the package. By performing a function which, in all other winders, requires many moving parts, the Rotating Traverse reduces the element of wear to a minimum, eliminates vibration and insures the winding of better packages for knitting or weaving.

It Does Not Chafe the Yarn. Yarn which has traveled in one direction when spun must travel in the opposite direction when wound. The Rotating Traverse revolves in the same direction as the yarn is traveling. There is no chafing, as with reciprocating-guide winders, to rough up the fibres. They remain a part of the yarn, adding to its strength and improving its finish.

Hard Ends and Underwinds Are Eliminated. The groove is so formed at the ends of the traverse that the yarn is reversed quickly — there is no dwell, as with reciprocating-guide winders, to cause hard ends. This permits uniform penetration and is one of the reasons why dyeing packages wound on the Roto-Coner take the dye so evenly. On knitting cones, this correct lay of yarn reduces press-offs, increases production at the knitting machine, and saves time for the operator.

No Roll-Cut Yarn. Cut yarn on knitting cones usually results from being nipped between slip roll and driving drums of reciprocating-guide winders . . . or from catching on burrs raised on sharp edges of metal drums. The smooth, one-piece Rotating Traverse on the Roto-Coner eliminates the chief causes of roll-cut yarn.

UNIVERSAL WINDING COMPANY

NEW YORK · PROVIDENCE · **BOSTON** · UTICA · CHARLOTTE · ATLANTA

7530

CAREFREE?

You bet!

* * * **consumers** appreciate the spot-proof and water-repellent finish AQUAROL gives to hosiery; silk, rayon, wool and cotton piece goods.

* * * **dyers** know that AQUAROL is economical and easy to apply by the one-bath method.

* * * **converters** rely on AQUAROL, confident that increasing demands for its use prove its effectiveness.

SMART MANUFACTURERS, CONVERTERS, DYERS AND FINISHERS KNOW THE GREATER SALES VALUE OF FABRICS PROCESSED WITH AQUAROL.

ARKANSAS CO • INC

233 BROADWAY • NEW YORK

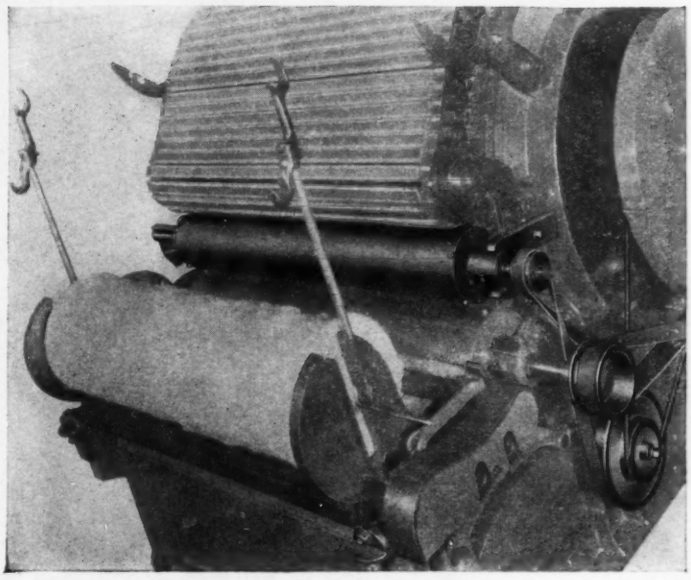
Get **REAL** *Water-Repellency . . . Get*

AQUAROL

REG. U. S. PAT. OFF.

FOR: HOSIERY · LINGERIE · DRESS GOODS · SKI CLOTH · UPHOLSTERY FABRICS · DRAPES, ETC.

Conquer Card Bearing "Taboos"

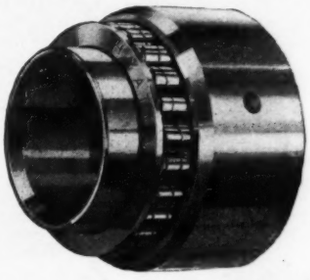


For years Hyatts have proved that they can stand up in woolen, worsted, and asbestos cards and in the Saco-Lowell Continuous Card Stripper. Why not put them in the licker-in of your COTTON CARDS. Hyatts are standard equipment on this Saco-Lowell Continuous Card Stripper and in the Idler Pulley.

Isn't it about time that Cotton Card bearings went modern? Particularly the licker-in position? That's what a lot of mill men tell us.

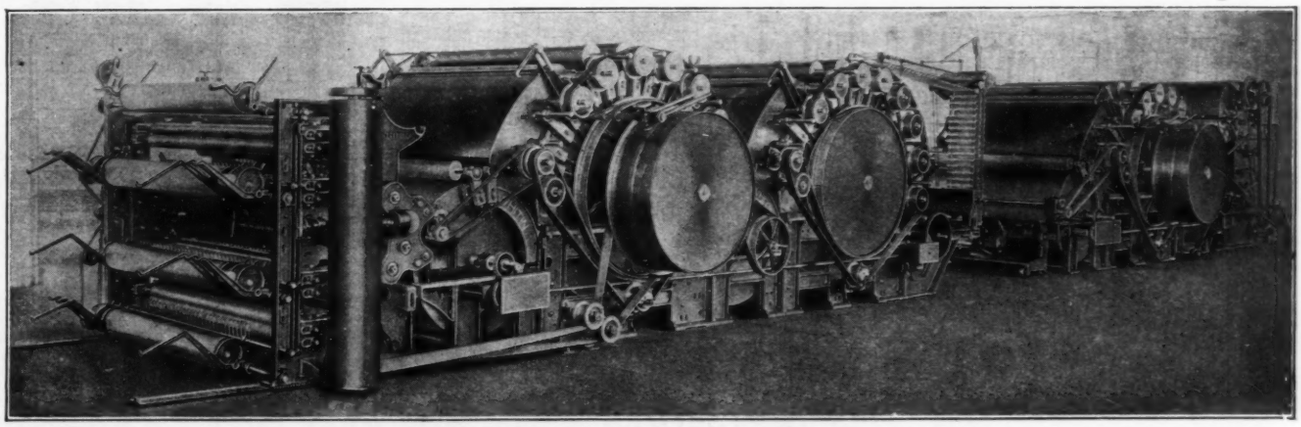
Well, why shouldn't they go modern—modern with long-life, accurate Hyatt Roller Bearings to permanently maintain card settings.

We know at least one Card Builder who is ready, willing, and waiting for modern minded mill men to say "I want Hyatts on my licker-in shafts". Hyatt Bearings Division, General Motors Corporation, P. O. Box 476, Newark, N. J.



Put these precision bearings on cylinder, doffer and licker-in shafts of your cards if you want to really maintain settings.

HYATT *Roller Bearings*



On main cylinder, fancies and drive, Hyatts are standard in this WHITIN CARD, as well as in the condenser.

DRIVES THAT MATCH YOUR HIGH SPEED EQUIPMENT

Insure LOW COST WEAVING

Crompton & Knowles type S-3 looms powered by Westinghouse 3-point suspension motors and WK starters.

Modern high-speed looms, such as the Crompton & Knowles S-3, immediately reduce weaving costs. But you make savings doubly sure when you match these looms with dependable Westinghouse drive.

The most important features of this drive are:

Plenty of power for breaking in looms, reserve capacity for all loads.

Low power consumption because of exceptionally high motor efficiency.

Low maintenance because of readily accessible oilers, and because oil cannot get into the motor windings. Indestructible rotors and long life bearings are other low maintenance features.

Tried-and-Proved Control that protects the motor against dangerous overloads, yet permits safe overloads without shut-down.

For your new looms, get the extra assurance of low cost operation that comes with using Westinghouse drive. It's designed especially for C & K models C3, C4, S3, S4, W2 and W3, and Draper Models X, C, XK and XL.

High efficiency and extra strength are built into Westinghouse loom motors. They are totally-enclosed, and windings are triple-impregnated to make them damage-proof against high humidity. Oil fillers are easily accessible.

Pedestal-mounted WK-18 starter. "Motor Watchman" effectively guards the motor against dangerous overloads. Safely and quickly reset when tripped.

LINT-FREE MOTORS—Four special features prevent lint from staying in Westinghouse textile motors.
"DE-ION" LINESTARTERS—Most important forward step in the history of motor control.
NOFUZE "DE-ION" CIRCUIT BREAKERS—eliminate fuse outages, resultant man and machine-hour losses.

Westinghouse Electric, Lima, Ohio

J 03015

UNDIVIDED RESPONSIBILITY MULTIPLIES THE VALUE of WESTINGHOUSE SERVICE

W WESTINGHOUSE ELECTRIC

FROM INCOMING LINE TO DRIVEN MACHINE

Specify Westinghouse

These books can solve your Short Center Drive Problems

These two booklets are of the greatest significance for anyone whose responsibility it is to *increase* performance and *decrease* costs on short center drives. One covers the engineering of V-Belt installations and the applications of Wedgbelt Drives. The other describes the outstanding characteristics of American Tension Control Motor Base Drives. Every Short Center Drive has its own peculiar characteristics. Each case warrants individual study. Have *all* the facts in hand, on *both* basic methods before making your decision on new equipment.

American Wedgbelt Drives

Better grooving, better balance, better bushings combine to make Wedgbelt Pulleys outstanding in their field. They are offered with the definite intention of providing a superior product, based on this company's two score years of producing quality power transmission products.

American Tension Control Motor Base

In its range of applications, both on flat belt and V-belt drives, there is no more efficient short center drive. In many cases it has reduced average belt tensions and bearing pressures 50% —with corresponding reductions in maintenance and replacement costs. Its superiority is a matter of proven engineering fact—its performance can be predetermined with mathematical accuracy.

MODERN GROUP DRIVE PTC

Modern Group Drives offer a real opportunity for substantial savings in mechanical power transmission. Wedgbelt Drives and Tension Control Motor Base Drives are ideal methods for connecting the prime mover with Modern Group Drive Installations.

Send us the facts about any difficult drive, or mail the coupon today for more complete information

The American Pulley Co.
4200 Wissahickon Ave.
Philadelphia, Pa.

Dept. 10

☐ Send your Wedgbelt Drive Catalog.
☐ Send your Tension Control Motor Base Catalog.
☐ Your representative will be welcome.

Name .....
Address .....
City ..... State .....

AMERICAN PULLEY COMPANY

ESKIER

is rapidly coming to the front as the industry's No. 1 Kier Boiling agent.

Thorough bottoming to yield practically pure cellulose requiring minimum of chemic.

Notable freedom from harshness, stains, resists, etc.

Resistant to variations in water supply; Action rapid and uniform.

Eskier conditioned goods are a pleasure to handle in later operations.

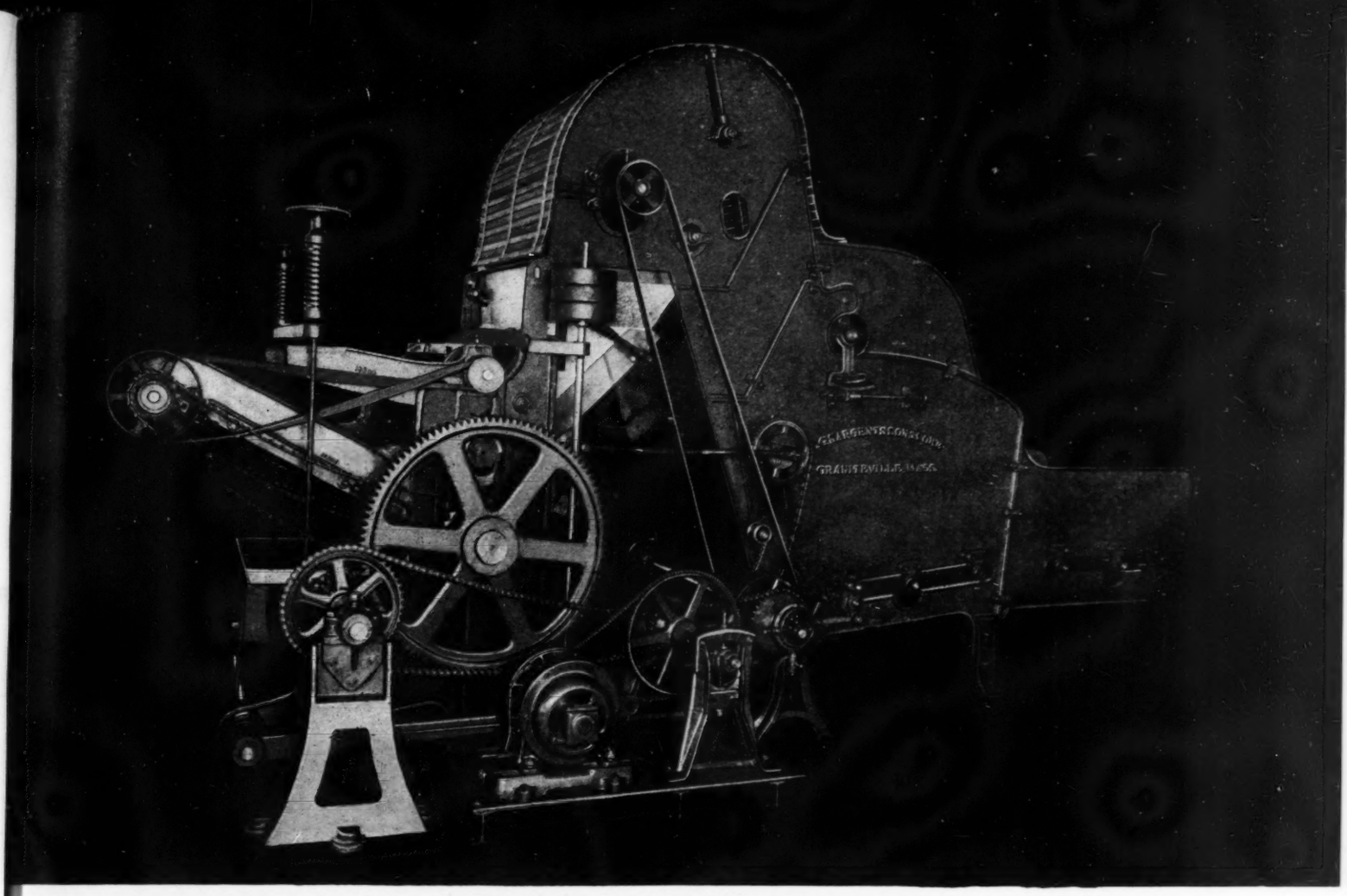
THE COWLES DETERGENT COMPANY

CLEVELAND, OHIO

The Cowles Detergent Co.
1314 Rhodes Haverty Bldg.
Atlanta, Ga.

The Watson Park Co.
261 Franklin Street
Boston, Mass.

Joseph Turner Co.
630 Fifth Avenue
New York City



In Service Since 1852

SARGENT PRODUCTS

Acidifying Machine—Automatic Extractor—Automatic Feeders—Backwashers—Backwash Dryers—Bagging Machines—Ball Winders—Carbonizing Dryers—Cloth Dryers—Carbonizing Dusters—Cotton Stock Dryers—Crush Roll Machines—Press Roll Machines—Single Apron Dryer—Skein Dryer—Special Dryers—Wool Dryers—Wool Washers—Yarn Conditioners—Yarn Scouring Machines—Burr Pickers—Mixing Pickers—Dusting Machines—Package Dryers—Tray Dryers—Opening Machines.

The Modern way to Extract
Scouring, Bleaching or Dye Liquors

The outstanding advantages of this means of extracting liquids from saturated fibres, include the following:

a. An even continuous flow of production into and through Dryer thus permitting maintenance of drying temperature with uniform drying results.

b. Fewer "bunches" of stock and consequent greater ease of air in Dryer to penetrate, than through stock "matted" by a hydro-extractor.

c. The natural results of continuous as compared with intermittent actior

d. Reduced danger hazard.

e. Saving in power.

f. Ease in operation. (Ask the men who tend them.)

g. Greater production with less labor. One firm states: One man operates the machine doing 6,000 pounds per day. Before two men and two hydroes did the same amount of work.

Compare this Extractor with your present system, then write us for further particulars and prices.

C. G. SARGENT'S SONS CORP.
BUILDERS

Graniteville, Mass.—Founded 1852

Southern Agents:
Fred H. White, Charlotte, N. C.
Fred P. Brooks, Atlanta, Ga.

Philadelphia Agent:
F. E. Wasson
930 Drexel Bldg.

Sargent is the Pioneer American Builder of Dryers

Where

SUPERLATIVE FASTNESS TO WASHING IS ESSENTIAL

Du Pont suggests...

PONTAMINE* DIAZO ORANGE RFW
PONTAMINE DIAZO SCARLET FW
PONTAMINE DIAZO SCARLET GFW
PONTAMINE DIAZO RED BFW

SUITABLE for use on wash-fast cotton, rayon and silk fabrics, these developed dyestuffs are in a class by themselves by virtue of their *outstanding fastness to washing.*

Recently introduced by Du Pont, they form the nucleus of a group of wash-fast colors which will be added to as research and experimentation develop new and improved products of this type. Washing exerts but a negligible effect upon the dyed shade and there is no danger of bleeding during laundering or wet processing. They discharge satisfactorily and may, therefore, be employed as grounds for vat and other prints.

In other respects, these products level and penetrate well and possess fastness properties that meet trade requirements.

DU PONT DYESTUFFS
REG. U.S. PAT. OFF.

*Reg. U. S. Pat. Off.

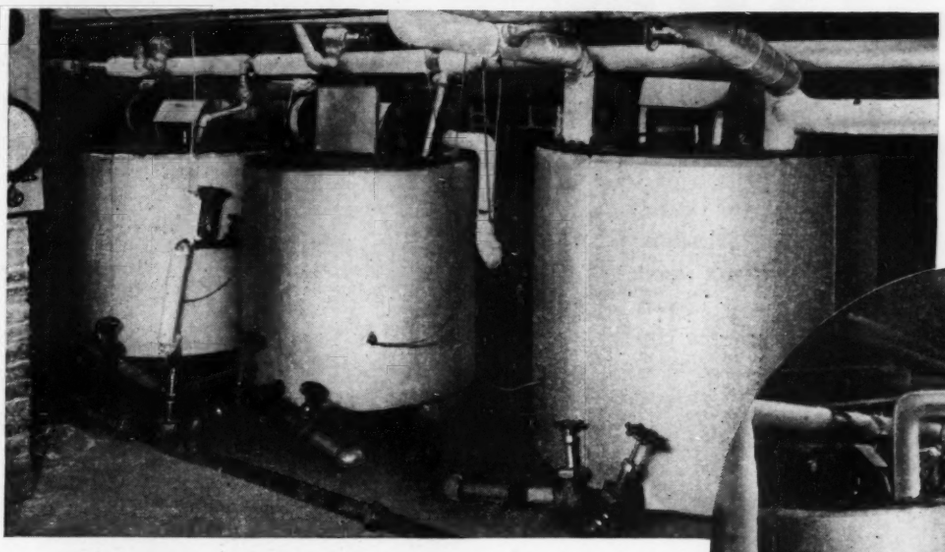
E. I. DU PONT DE NEMOURS & COMPANY, INCORPORATED

ORGANIC CHEMICALS DEPARTMENT

DYESTUFFS DIVISION **WILMINGTON, DELAWARE, U. S. A.**

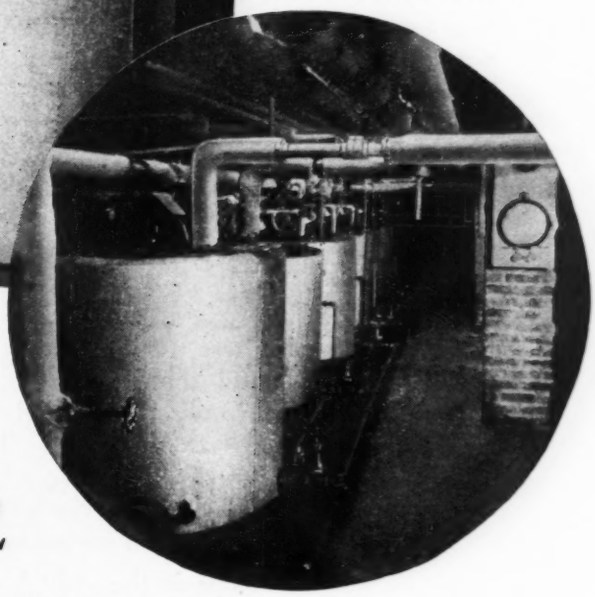
BRANCH OFFICES: Boston, Mass. Charlotte, N. C. Chicago, Ill. Philadelphia, Pa. Providence, R. I. New York, N. Y. San Francisco, Calif.

Any Size CRACK *is* TOO BIG *in a Size-Kettle!*



Three of the nine Nickel-Clad Steel size-kettles (cookers and storage), installed at the plant of West Point Mfg. Co., West Point, Ga., Lanett Mill division. The kettles were fabricated by R. D. Cole Mfg. Co., Newnan, Ga., of ¼-in. thick 10% Lukens Nickel-Clad Steel, using welded construction throughout.

(Below) The other six of this plant's nine size-kettles. Of the nine, seven are cooking kettles, 42 in. dia. x 42 in. high; two are storage kettles, 48 in. x 48 in. Agitators and heating coils in all are Monel.



Eliminate cracks . . . build your kettles of NICKEL-CLAD STEEL

GIVE a thought to the question of costs on your cooking and storage size kettles. Better still, take a little time to get *the exact figures* on how often you've repaired and replaced them the last two years.

For here's a new way to cut those costs way down. New, that is, to some textile men. Those who have tried it are keen about it.

Nickel-Clad Steel kettles outlast by years the ones you're used to . . . because they cut out the source of the chief source of wear. In tanks with a separate corrosion resistant lining, you often find the lining has failed because of cracking. Once that happens, it means repairs, and repairs mean costs.

But here's how Nickel-Clad Steel works. It's not a separate lining. It is a permanently bonded bi-metal, 10% or 20% of the thickness pure Nickel. Steel for economy, Nickel for corrosion resistance. And the only surface that touches the contents is pure Nickel.

No fear of these two metals coming apart. We'd like to send you a sample of Nickel-Clad Steel so that you may see and test for yourself that the Nickel does not separate from the steel during deformation in forming and fabricating.

Ever since the West Point Mfg. Co. had these kettles made of Nickel-Clad Steel, they've found that cracks are OUT for good. And cracks are what put size kettles on the repair list.

For slasher drums, the same properties make Nickel-Clad Steel the ideal metal for long life.

Send the coupon to-day. Nickel-Clad Steel is easily fabricated. And somewhere near you is an experienced fabricator who can start cutting your costs.

THE INTERNATIONAL NICKEL COMPANY, INC.
67 WALL STREET NEW YORK, N. Y.

C 8-37

The INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street, New York, N. Y.

Gentlemen: Kindly send me the name and address of the nearest fabricator experienced in handling Nickel-Clad Steel.

Name .....

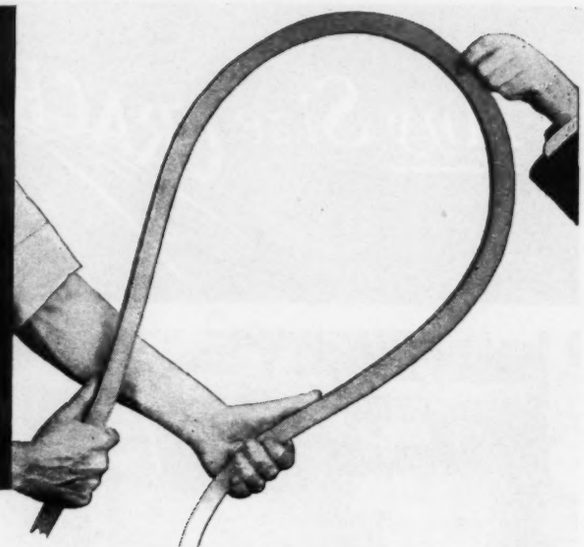
Firm .....

Address .....

City ..... State .....

NICKEL-CLAD STEEL

This Simple Test Shows WHY V-Belts NEED THE CONCAVE SIDE



Bend *any* V-belt and *feel* its top narrow under tension, its bottom widen under compression. You will see that a *straight-sided* V-belt *must* assume in its sheave-groove the shape shown in figure 1, below. Note the out-bulge of the sides!

FIG. 1 FIG. 2

Now try the same test with a Gates Vulco Rope. You will find that the *same shape change* merely *straightens* the precisely engineered concave side (see figure 2). There is no side-bulge. This insures uniform side-wall wear; *longer* life! Moreover, the full side-wall grip on the pulley naturally carries heavier loads without slipping —a saving in belts and also a saving in *power!*

The Gates Vulco Rope is the only V-Belt built with the patented concave side.

Engineering Offices and Stocks in All Large Industrial Centers

THE GATES RUBBER COMPANY

Factory Branches

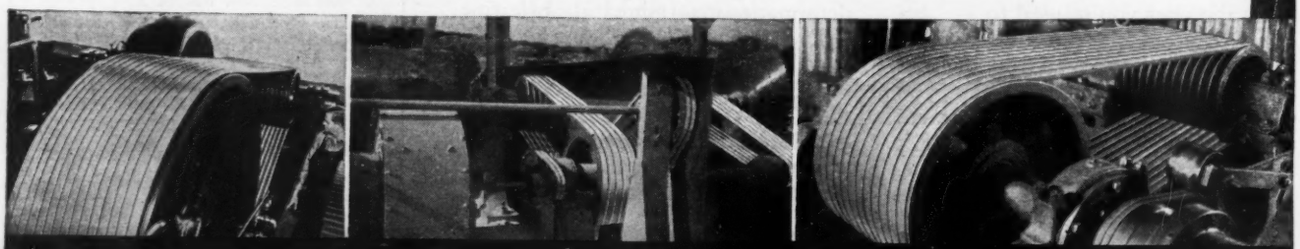
Terminal Building
Hoboken, N. J.

1524 So. Western Ave.
Chicago

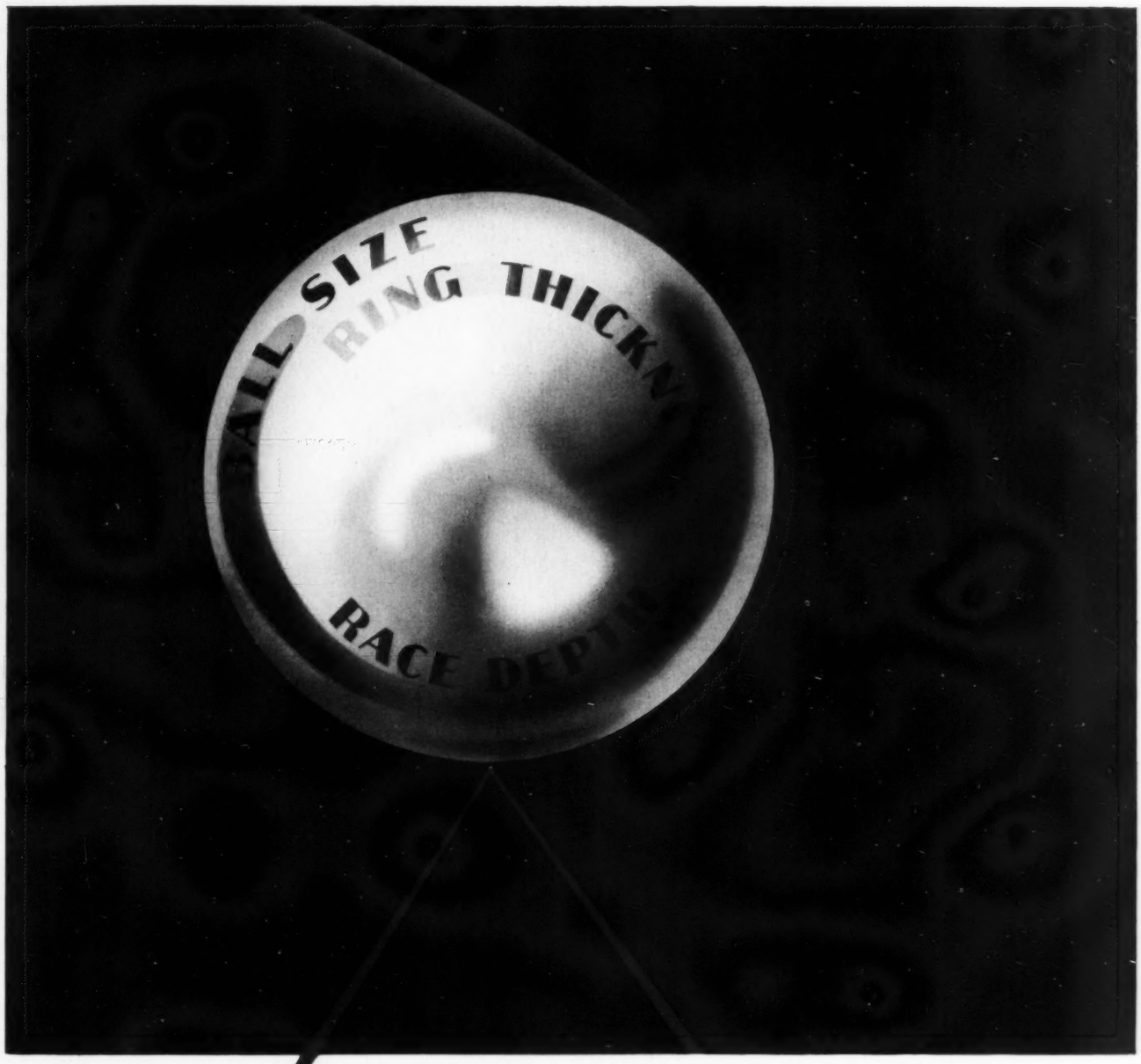
741 Warehouse St.
Los Angeles

2213 Griffin Street, Dallas

999 South Broadway, Denver



GATES VULCO ROPE DRIVES



Balance in Design

In ball bearing design, ball size, race depth and ring thickness determine life and capacity.

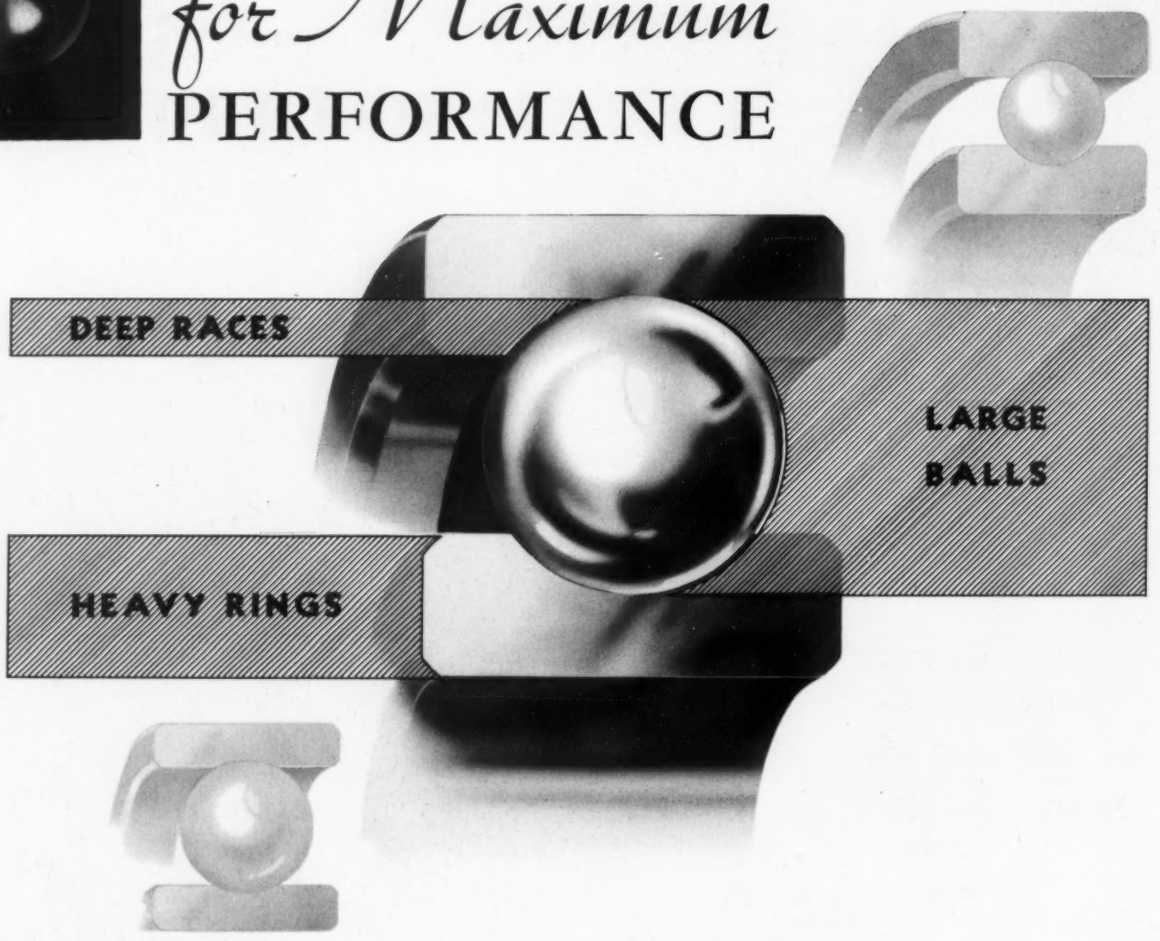
Fafnir's larger balls carry greater load; make fewer revolutions per bearing revolution, with resultant longer life. Fafnir's deeper races also increase load capacity, and provide thrust capacity to a degree unusual in a radial bearing.

Every Fafnir Ball Bearing has been developed to the point where high capacity and long life are inherent attributes of a perfectly balanced design.

FAFNIR BALL BEARINGS

THE BALANCED LINE . . . MOST COMPLETE IN AMERICA

BALANCED *for Maximum* PERFORMANCE



Consider the three ball bearing designs illustrated above. In one, ring thickness has been increased beyond the necessary point, reducing ball size — and consequently, life and capacity. In another, ball size is increased to the point where ring thickness is insufficient to insure strength.

In the third (center) note how Fafnir, in pioneering the Maximum Type design, provided ring thickness adequate for strength, yet brought race depth and ball size to the proper point for maximum performance. *Fafnir is the only manufacturer to provide this largest possible ball size throughout the full range of bearing sizes.* The Fafnir Bearing Company, New Britain, Conn.

Engineering Manual No. 35

A summary of the principles affecting the selection, application, and operation of anti-friction bearings — and particularly ball bearings — with a complete tabulation of characteristics, dimensions, and capacities. A copy will be sent you without cost.

FAFNIR BALL BEARINGS

THE BALANCED LINE . . . MOST COMPLETE IN AMERICA

Burroughs

NEW LOW-COST PAYROLL MACHINE

SAVES TIME AND MONEY
In compiling figures required by the
SOCIAL SECURITY ACT

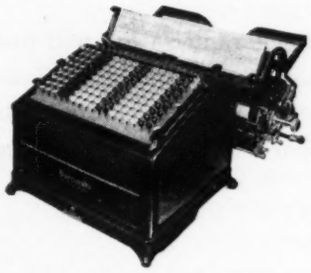
A typewriter that provides
4 PAYROLL RECORDS
in one writing

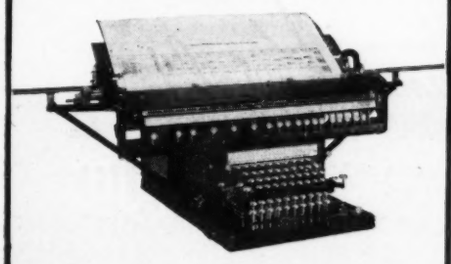
1 THE PAYROLL
2 EARNINGS RECORD
3 EMPLOYEE'S STATEMENT
4 PAY CHECK or pay envelope

With fast electric carriage return, electric shift to capitals, and convenient tabulator control—this new Burroughs payroll typewriter writes four payroll records in a fraction of the time required by ordinary methods. It will pay you to see it, as well as other new Burroughs payroll machines from which to select the equipment best suited to your own individual requirements. Telephone the local Burroughs office or mail the coupon.

THERE ARE MANY OTHER BURROUGHS MACHINES FOR PAYROLL ACCOUNTING

There are many styles and models of Burroughs payroll machines. All write four payroll records in one operation; many compute as they post and accumulate totals. However large or small your payroll—whatever type of payroll accounting problem faces you—Burroughs can provide equipment to handle the work with exceptional speed, ease and economy.





MAIL THIS COUPON FOR COMPLETE INFORMATION!

BURROUGHS ADDING MACHINE CO., 6824 SECOND BLVD., DETROIT, MICH.

☐ Send me complete information about the new Burroughs Payroll Typewriter that writes four records in one operation.

☐ I should like to receive your booklet showing various ways to handle payroll records on Burroughs Computing Payroll Machines and Burroughs Typewriter Accounting Machines.

Name_____ Address_____

We'll add 1 or 2% to that
or you get your money back

"Nobody's ever sold leather belting like this before, but here goes. We're so certain that the new Research Belting will increase average machine production at least 1 or 2% over ordinary belting that we'll give you your money back if it doesn't.

But it will. It has, on all types of drives. $2.88 extra profit a year on each loom. 15 feet more an hour on spinning frames. 4% more production on woolen cards. 6 more picks a minute.

"Figure it out. With Research Belting on all your drives — even at only 1 or 2% increase — you'd make a pretty profit!"

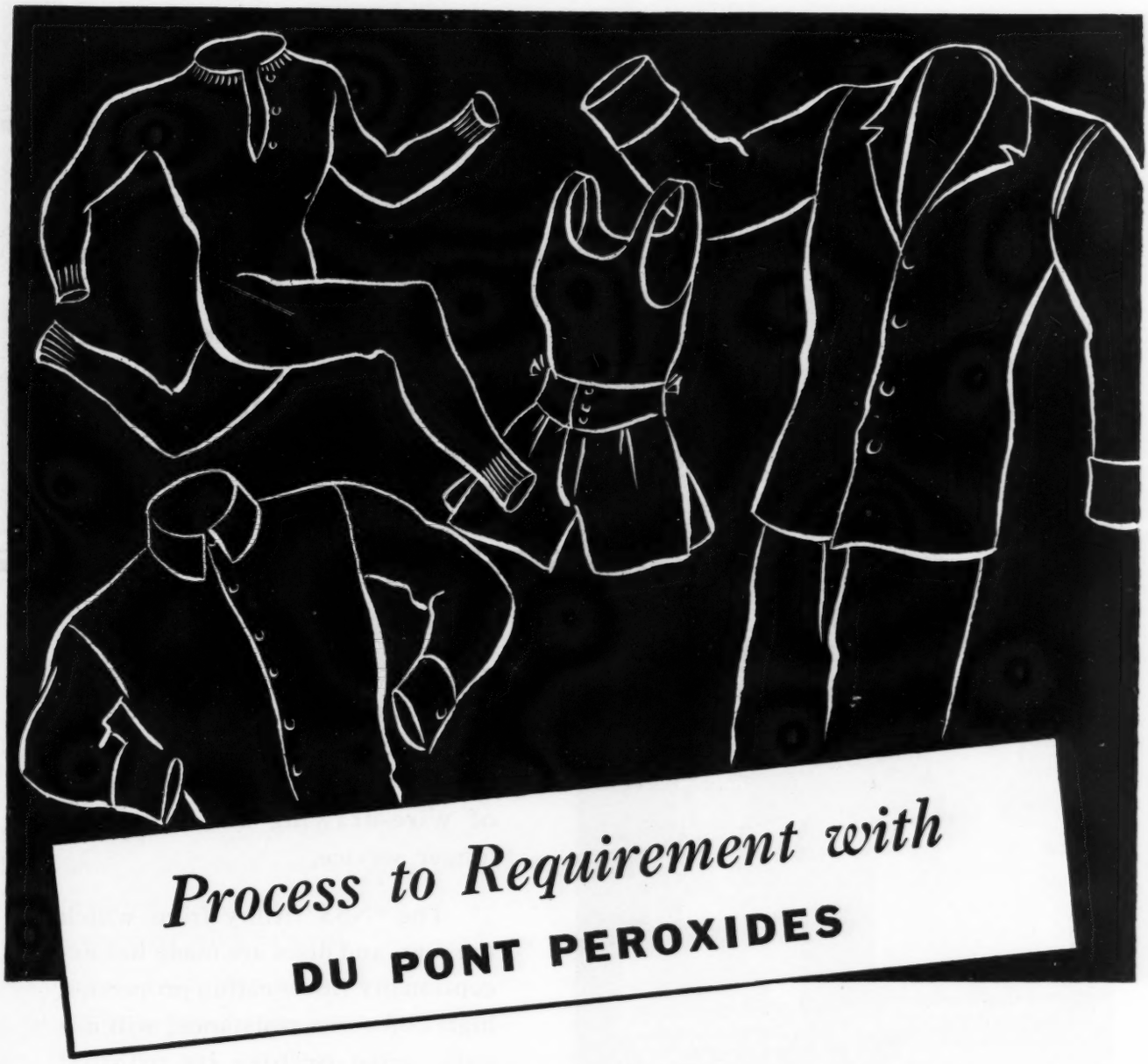
YOU can figure it out on your machines, too. Sometimes it runs to thousands of dollars a year. And it's all because completely new manufacturing processes give Research Belting a higher transmission capacity that increases average machine production.

Take advantage of our "money-back" guarantee—you will find the nearest Graton & Knight sales office or distributor in our insert in the belting section of Thomas' Register. Why not call today to get Research Belting on one of your important drives where increased production can be measured.

MODERN GROUP DRIVE

Graton and Knight
RESEARCH BELTING
from the Home of Research, Worcester, Mass.

WRITE FOR OUR HOME OF RESEARCH BOOK ON ECONOMICAL POWER TRANSMISSION
6802



Process to Requirement with

DU PONT PEROXIDES

THE bleach you want—a market white, a half bleach for dye bottoms only, or a full bleach—you can get it safely and economically by processing with du Pont Peroxides.

For textile processing, du Pont offers three dependable Peroxides: DFF†, SOLOZONE*, dustless and free-flowing Sodium Peroxide; ALBONE*, 100-Volume electrolytic Hydrogen Peroxide; and du Pont Sodium Perborate. With these bleaching agents it is possible to produce *quality* bleached goods which meet the most critical consumer requirements. Our Technical Service will be glad to cooperate with you in the efficient application of these peroxides to meet particular operating conditions within your mill. A call or letter to our nearest district office will bring a bleaching expert.

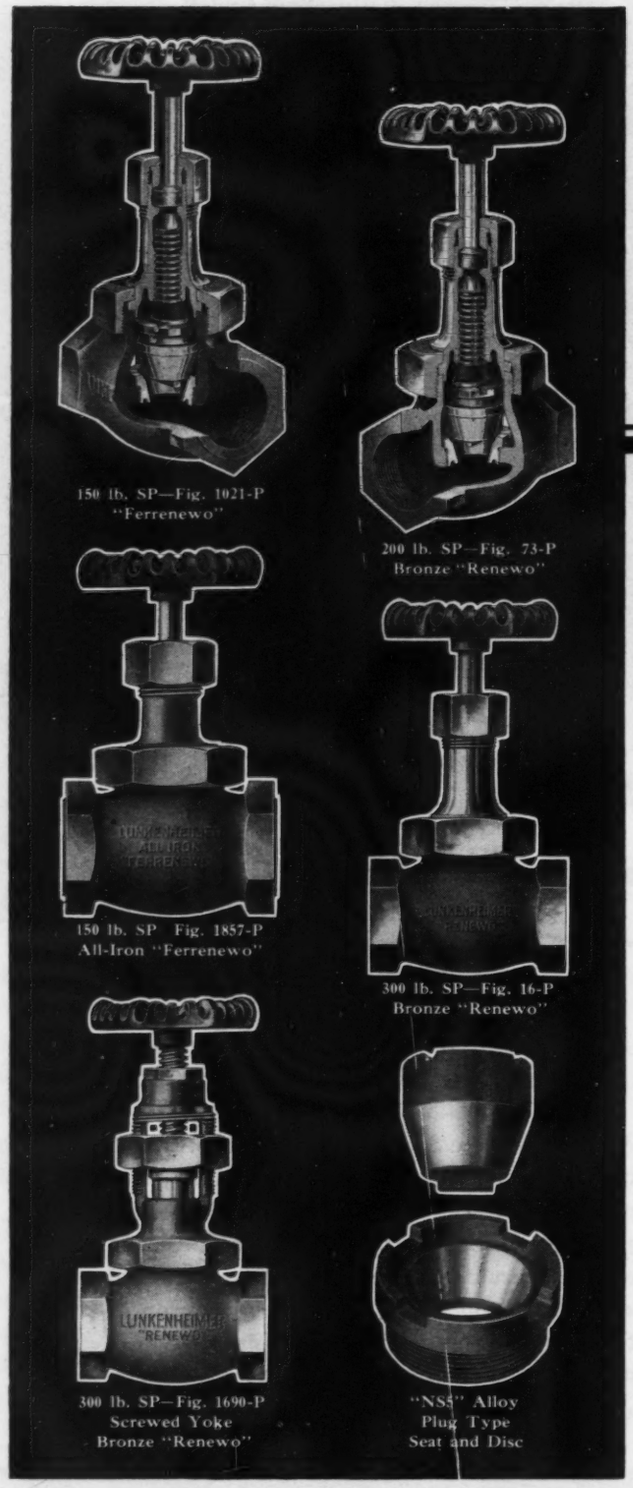
†Trade Mark *Reg. U. S. Pat. Off.

DU PONT
REG. U.S. PAT. OFF.

The R. & H. Chemicals Department
E. I. DU PONT DE NEMOURS & COMPANY, INC.
Wilmington, Delaware

District Sales Offices: Baltimore, Boston, Charlotte, Chicago, Cleveland, Kansas City, Newark, New York, Philadelphia, Pittsburgh, San Francisco

To Meet the Trend Toward Wider Seat Faces



And to provide the proper valves for various pressures, Lunkenheimer offers a complete line of plug type seat and disc valves as illustrated, for steam pressures from 150 lb. to 300 lb.

The seats and discs have wide, uniform bearing contacts, accurately machined and carefully lapped to insure a perfect fit. The wide seating surface reduces the effect of wire-drawing and promotes longer service.

The "NS5" Alloy from which the seats and discs are made has exceptionally fine wearing properties, high corrosion resistance, will not gall, seize or lose its original hardness.

Install Lunkenheimer plug type valves and profit by the trouble-free, low-cost service you will experience.

THE LUNKENHEIMER CO.
"QUALITY"
CINCINNATI, OHIO, U. S. A.
NEW YORK CHICAGO
BOSTON PHILADELPHIA
EXPORT DEPT. 318-322 HUDSON ST., NEW YORK

Buy QUALITY—Buy LUNKENHEIMER

102-85-10

Business going on BETTER than usual

There's only one kind of air that's friendly to spinning and weaving rooms. *And it doesn't come through a window.* So shut your windows. Lock them. If it were not for loss of light, even board them up—anything to keep them closed. Then get your conditioned air from a Parks Automatic Airchanger and see what happens.

All through your spinning and weaving rooms you'll have constant humidity, evenly distributed, with maximum cooling as well. For the Airchanger gives your mill conditioned air in *carefully measured quantities.* Local drafts, spotty conditions, ends down, seconds are among the missing. While production steps up all around.

And the investment is not as much as you think. For the Parks Automatic Airchanger is used with your present humidifying system—giving you the equivalent of a complete central station unit at a reduced cost. In improved quantity and quality of product, it pays for itself.

PARKS
Certified Climate

Gentlemen: Please send me Booklet 235 on the Parks Automatic Airchanger ☐ You may have an engineer call ☐ (Please check)

Name .....

Company .....

Address .....

City ..... *State* .....

PARKS-CRAMER CO., FITCHBURG, MASS . . . CHARLOTTE, N. C.

COTTON YARN MILL INSTALLS LIGHT CONDITIONING

A scientific light conditioning installation is providing the Eastern Manufacturing Company's yarn mill at Selma, N. C. with several profit-making advantages:

1. **Night production always equals and frequently exceeds that of the day shift.**
2. **Many employees prefer working on the night shift because the even quality of the lighting is less tiring on eyes.**
3. **Night help does not tire so quickly as under the old system.**
4. **The average quality of production is higher.**
5. **Less "seconds" to set aside.**

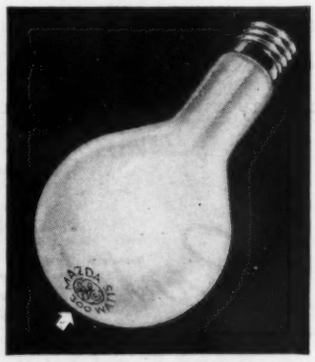
Light conditioning also offers textile mills many other advantages that help stop profit leaks by decreasing production costs, improving the morale of employees, and reducing accidents.

Important to the success and efficiency of any relighting program, is the use of good lamp bulbs. The Eastern Manufacturing Company uses MAZDA lamps made by General Electric because these lamps are brighter than ever before. And so provide more light at no additional cost for current.

When you light condition your mills, use the new, brighter G-E bulbs . . . the kind that *Stay Brighter Longer*. For further details, write to General Electric Co., Dept. 166-C, Nela Park, Cleveland, Ohio.

WHAT IS LIGHT CONDITIONING? Industrial light conditioning is simply providing the right amount of light and the right kind of lighting for seeing and comfort wherever eyes are used in factories.

With a new General Electric Light Meter that measures light as simply as a thermometer measures temperature, you can measure the lighting in your plant and see whether it is up to light conditioning standards. Every textile mill executive should have one. Costs $11.50.

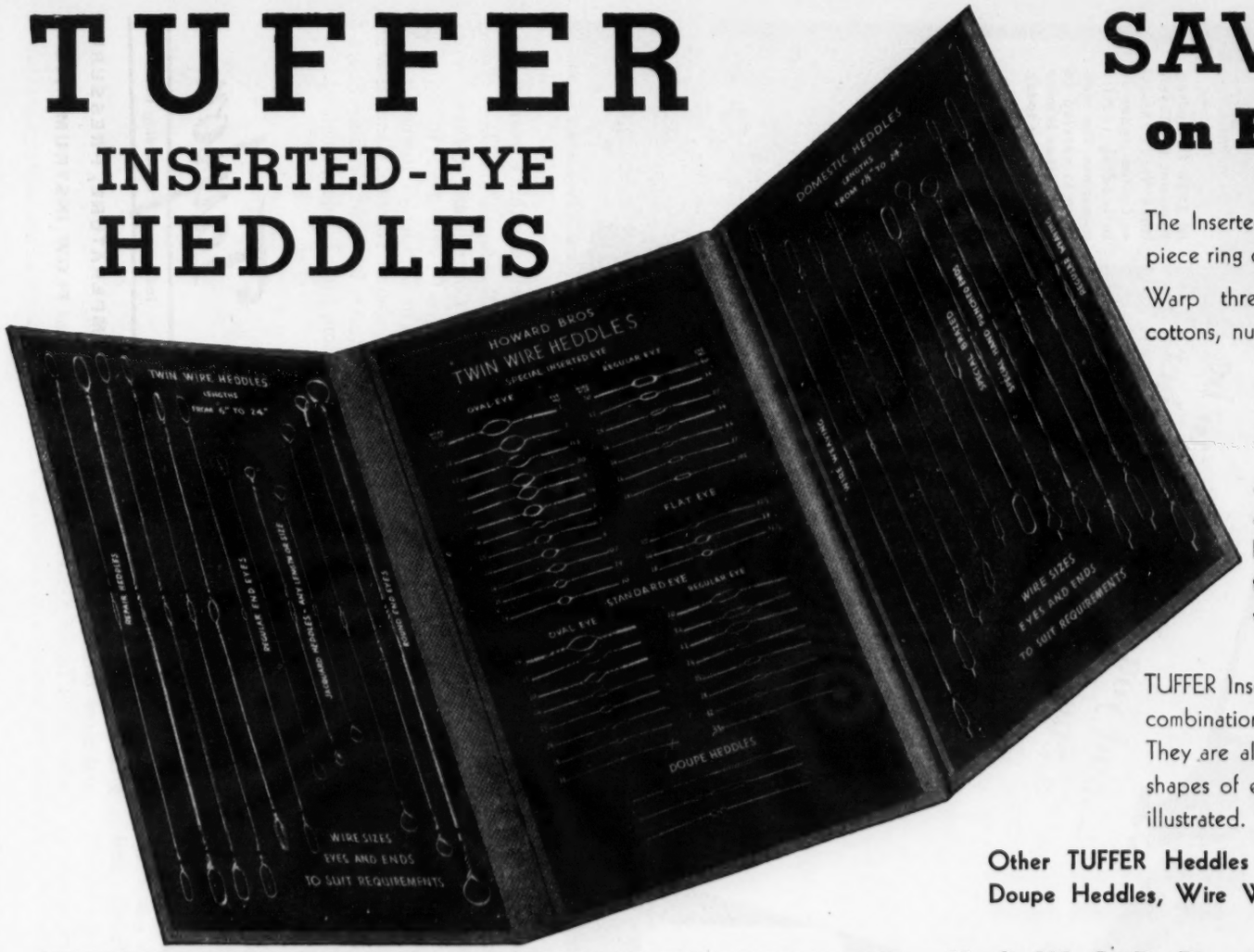


THEY STAY BRIGHTER LONGER

FOR MORE LIGHT AT NO EXTRA COST, CHANGE TO THE NEW AND BRIGHTER MAZDA LAMPS MADE BY

GENERAL ELECTRIC

TUFFER
INSERTED-EYE HEDDLES



SAVE WEAR
on Heddle and Warp

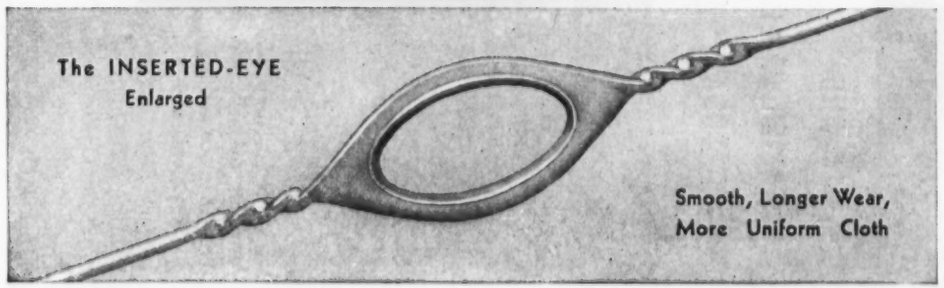
The Inserted-Eye—exclusive with Howard Bros.—is a one-piece ring of metal inserted in TUFFER Twin Wire Heddles.

Warp threads—particularly heavier woolens, worsteds, cottons, nub and slub yarns slide through smoothly without breakage, and the Inserted-Eye does not wear and chafe them. There are less broken ends, less seconds, and more uniform cloth.

A prominent woolen mill reports: "We have tried all kinds, but this has them all stopped. We have less Warp trouble and while they cost more at first they are cheap in the long run and we advise all woolen and worsted mills to use them."

TUFFER Inserted-Eye Heddles can be made in any size or combination of center and end eyes for your particular work. They are also available for quick delivery in many sizes and shapes of eyes and ends as well as several sizes of wire as illustrated. Write for samples.

Other TUFFER Heddles are Repair Heddles, Jacquard Heddles, Doupe Heddles, Wire Weaving Heddles and Domestic Heddles.



HOWARD BROS. MFG. CO.

HOME OFFICE AND FACTORY: **WORCESTER, MASS.**

Southern Plant: 244 Forsythe St., Atlanta **Branch Offices:** Philadelphia, Dallas

Products: Card Clothing for Woolen, Worsted, Cotton, Asbestos, and Silk Cards—Napper Clothing, Brush Clothing, Strickles, Emery Fillets, Top Flats Recovered and extra sets loaned at all plants—Lickerins and Garnett Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant—Midgley Patented Hand Stripping Cards, Howard's Special Hand Stripping Cards and Inserted-Eye and Regular Wire Heddles

The answer to better weaving

EASY TO FIND IN '29
—and you don't have to be a Sherlock Holmes either
POOR slashing stands out like a sore thumb. There are many evidences of it usually, but if one watches the aisles of a weave room, he will see plenty.
Shedding is Exhibit A in any case against the slasher room. The experienced mill man keeps careful tabs on his weave room sweepings. There is a story in them for him.
No matter what kind of slashing results you are getting, they can be improved substantially with Tycos control. Here is a system that is thoroughgoing and complete. Regulators are provided for size coolers, size boxes and drying cylinders. No matter how skillful, how reliable your slashing men are they can't hope to equal the sensitive automatic control of this system. It is giving mill men a new conception of slashing costs in many mills throughout the country. It stands for uniformity of the warps.
We shall gladly go into detail and show you what this system is accomplishing in mills similar to your own. Write today.
Taylor Instrument Companies
ROCHESTER, N. Y., U. S. A.
Canadian Plant Tycos Bldg. Toronto
Atlanta Office 406 Bona Allen Building Atlanta, Georgia
Boston Office 141 Milk Street Boston, Mass.
Manufacturing Distributors in Great Britain Short & Mason, Ltd., London
SLASHER CONTROL SYSTEM
Tycos for Guaranteed Results
AND EASIER STILL TODAY

IN 1929 this advertisement for Taylor (then "Tycos") Slasher Control appeared in leading textile magazines. The message it carried to millmen then is more than ever true today.

EVERY textile man knows that fine weave room results are impossible without accurate slasher control. And over the past ten years more and more textile men have learned that accurate slasher control means *Taylor Slasher Control.*

Millmen who installed Taylor Control in 1929 or earlier bought a soundly engineered system which has proved its worth by cutting costs, improving finished goods and paying them profits in every year since.

Those who install Taylor Slasher Control in 1937 buy all this and something more. For today Taylor (and only Taylor) also gives you the benefit of a rich store of experience, a record of proven dependability in more than eighty leading mills, and a prestige that comes only from years of success in solving textile problems. That is why today Taylor Slasher Control is an investment which you *know* will pay you dividends in lower production costs, finer finished goods and ever increasing profits.

Each installation presents an individual problem, but every mill employing Taylor Slasher Control enjoys these same advantages: increased speed of production, more uniformly sized warps, savings in raw materials, greater efficiency in the weaving room and more uniform finished goods. In most mills Taylor Systems have paid for themselves within a year.

For full information about Taylor Slasher Control, ask a Taylor representative. Or write direct to Taylor Instrument Companies, Rochester, N.Y. Plant also in Toronto, Canada. Manufacturers in Great Britain—Short & Mason, Ltd., London, England.

Taylor

Indicating Recording Controlling

TEMPERATURE, PRESSURE *and* **FLOW INSTRUMENTS**

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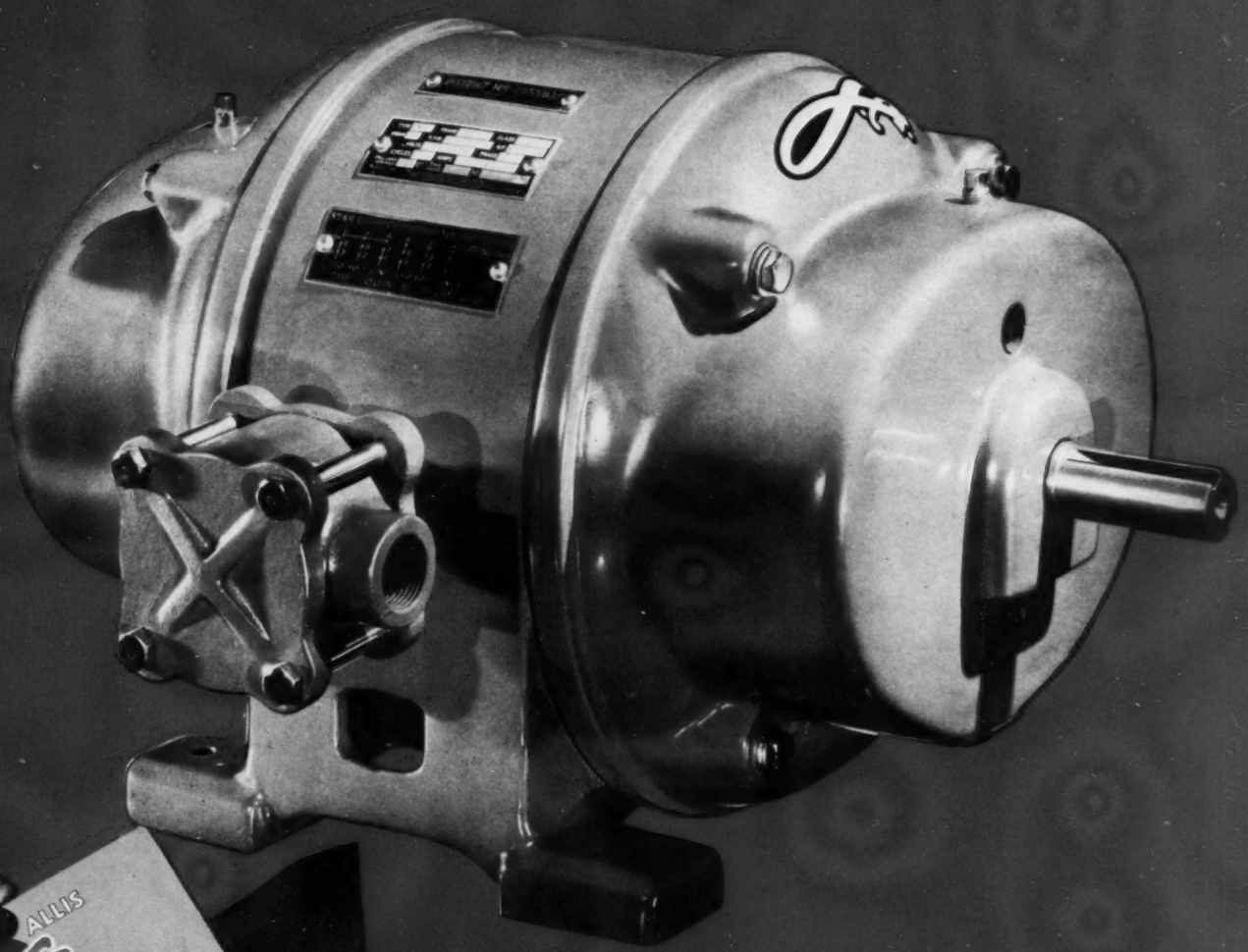

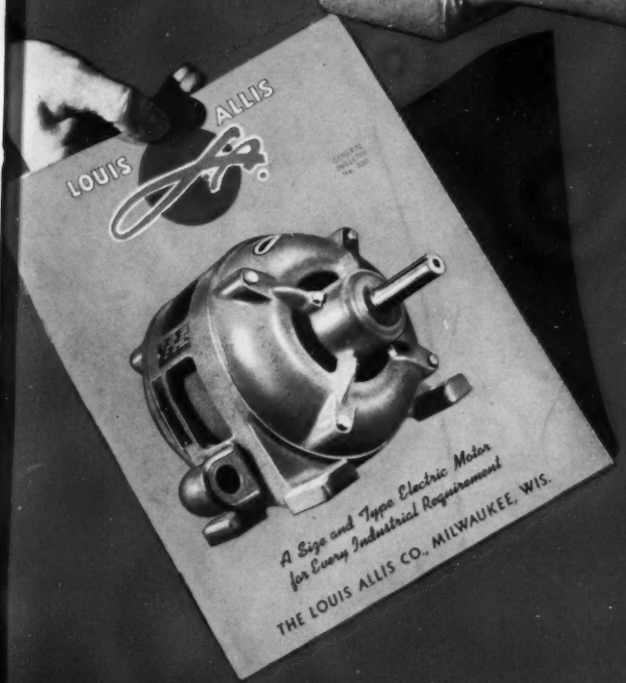

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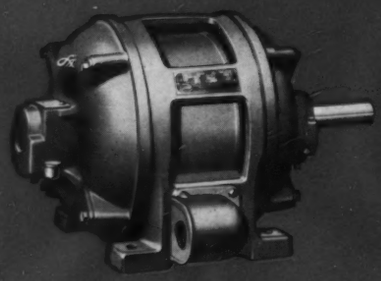

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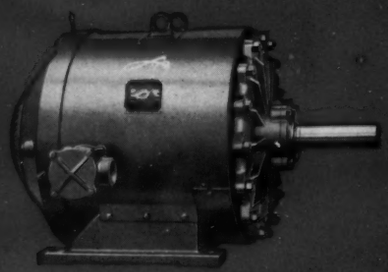

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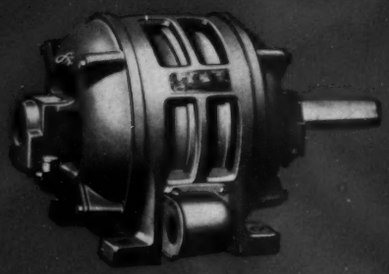

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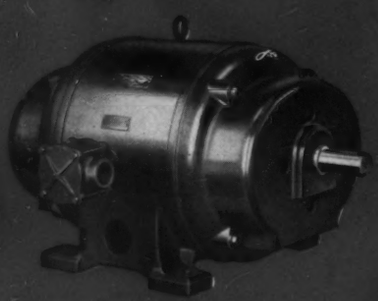

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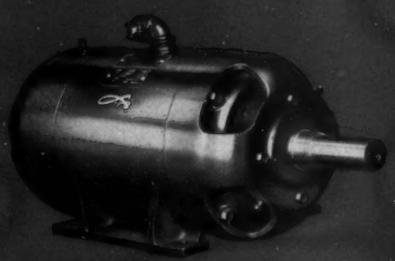

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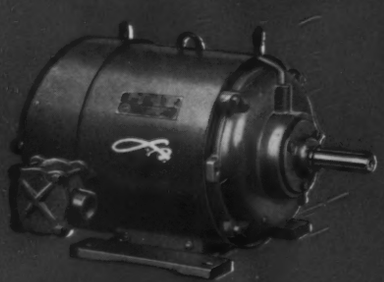

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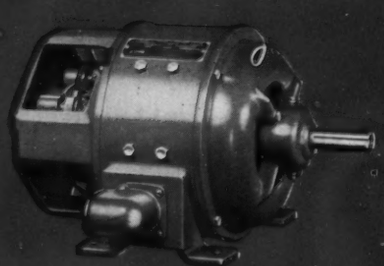

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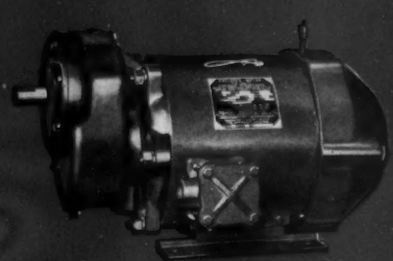

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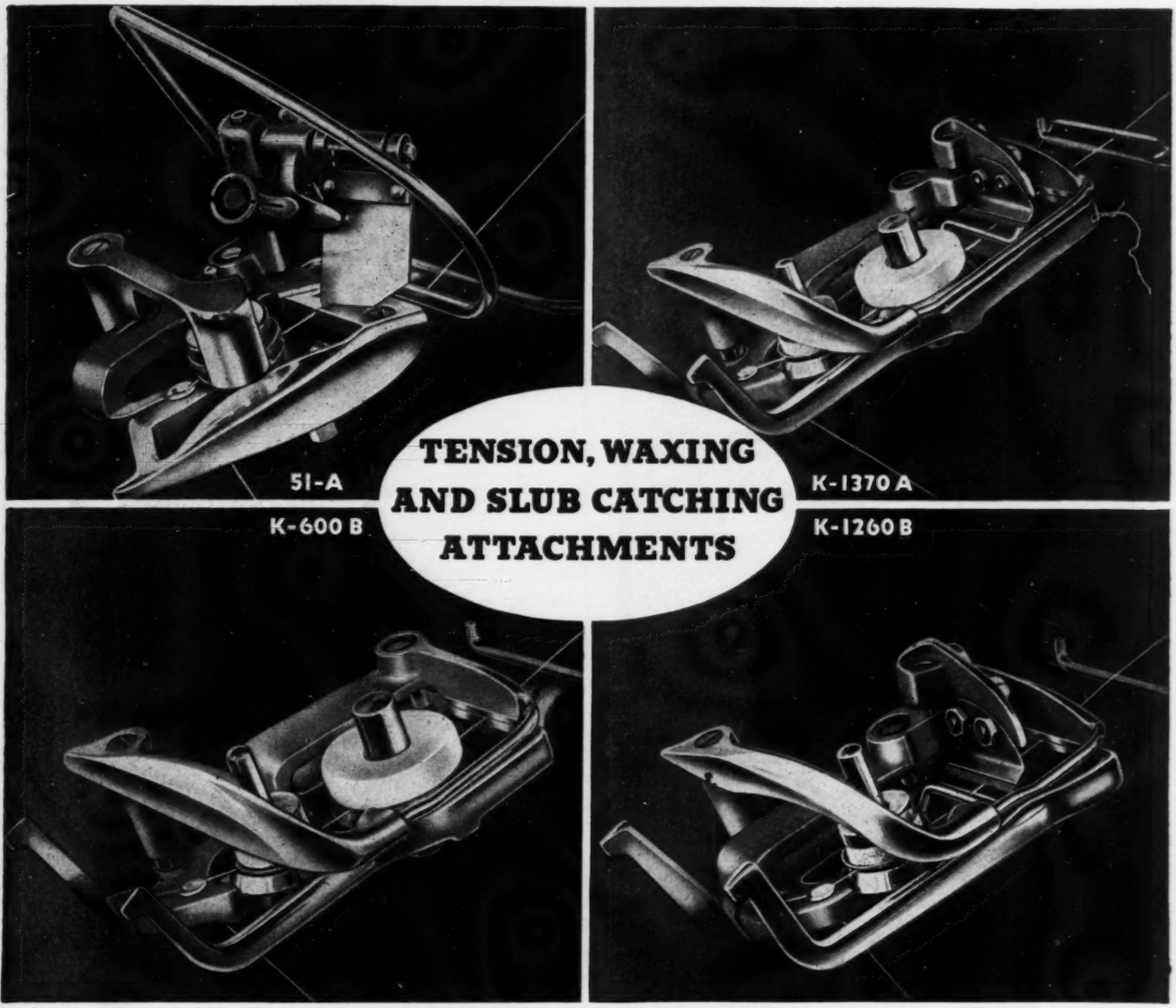

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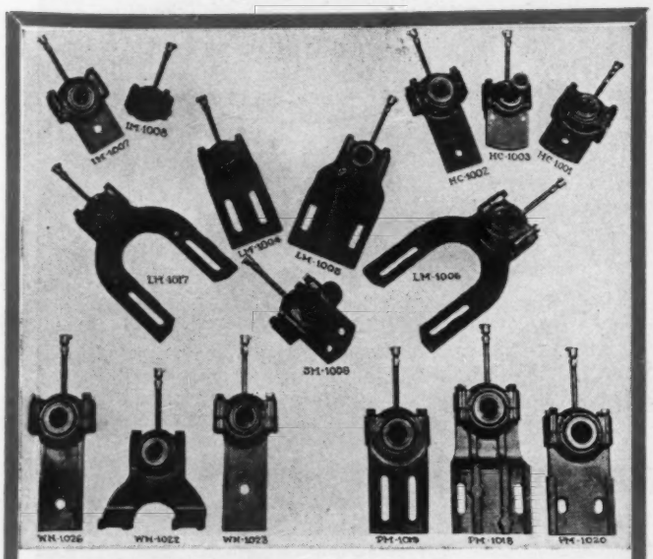

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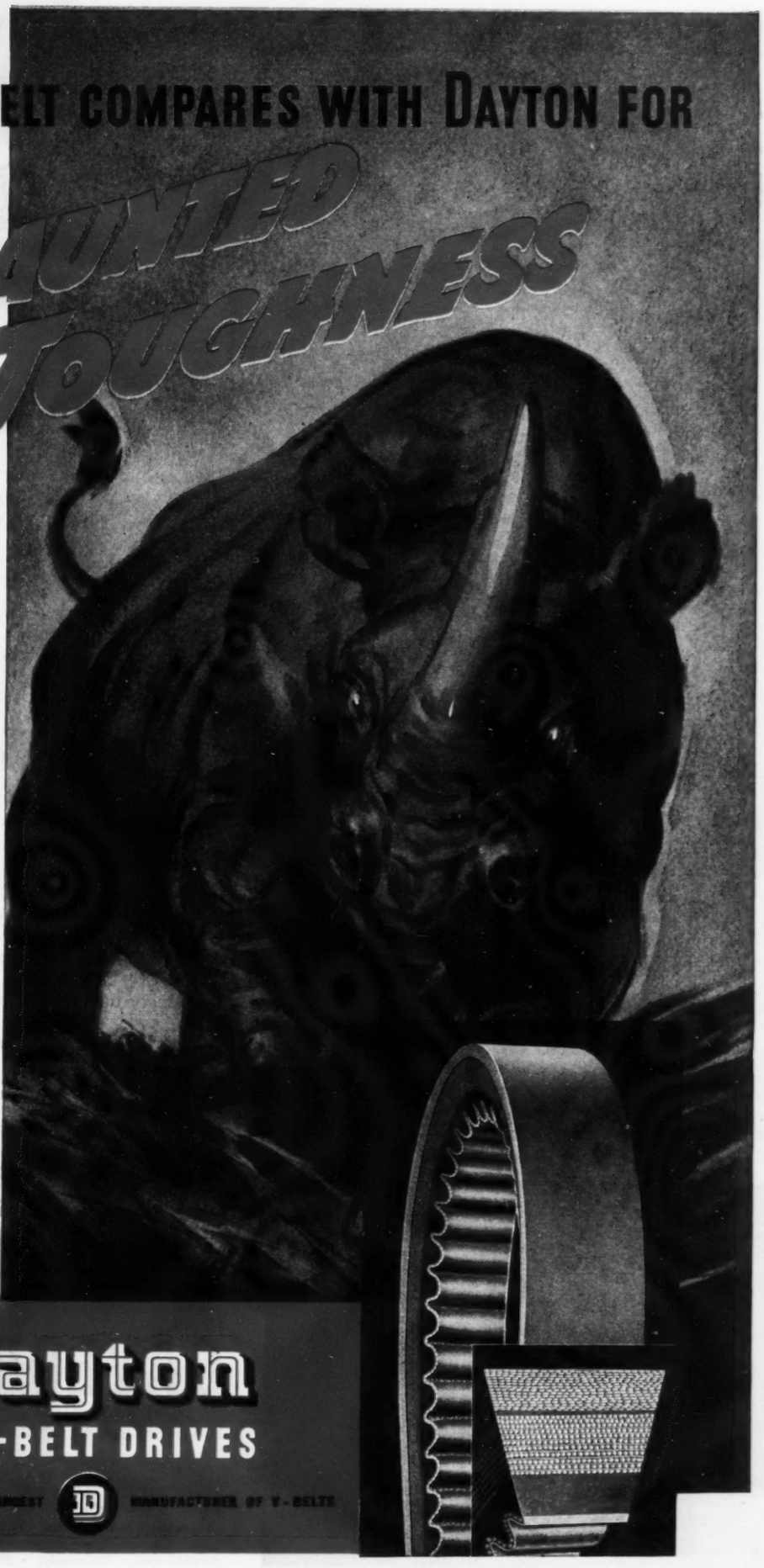

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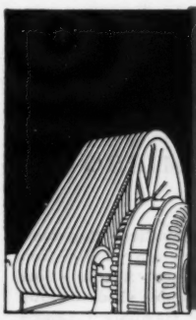

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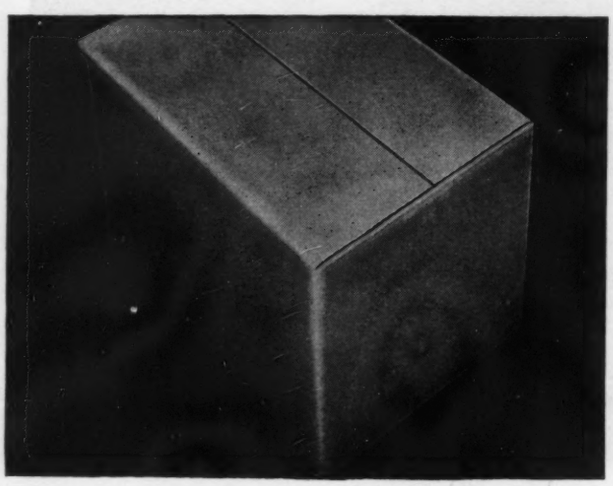

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COTTON

Vol. 101 No. 8 AUGUST, 1937

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Vol. 101
No. 8

COTTON

August,
1937

South Carolina Grows Longer Staples for Its Mills

By A. B. Bryan

Photographs, Courtesy Coker's Pedigreed Seed Co.

WHY shouldn't a state furnish the grade and staple of cotton its mills demand? South Carolina is educating its farmers and encouraging them to produce better cotton . . . . . .

TWO NOTEWORTHY things have happened in South Carolina in cotton production during the last 10 or 12 years. These are:

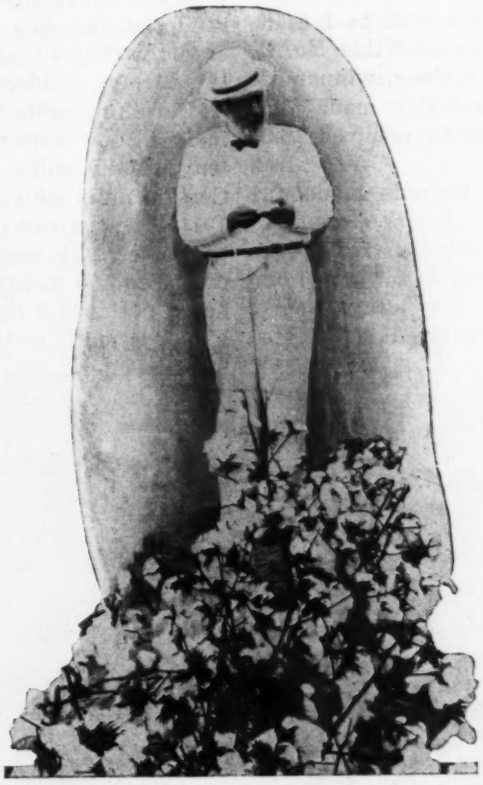
1. A decided improvement in production per acre in the face of the boll weevil, as shown by average yields. The average yield for the state during a five-year period, 1924-28, was only 186 pounds of lint per acre; the average for the last five-year period 1932-36 was 251 pounds per acre.

2. A much more significant improvement has been the long stride toward longer staple, from a predominance of 7/8-inch cotton to that of one-inch plus. In 1929—less than a decade ago—only 36.7 per cent of South Carolina cotton was 15/16-inch or longer, but by 1936 this length of staple had risen to 94.7 per cent, and 72 per cent of the 1936 crop was one inch or longer staple.

Marking another milestone along the road which South Carolina farmers are traveling toward superior quality cotton is the recent report of results secured in a long staple cotton contest conducted in 1936 in two of South Carolina's fine cotton counties, Darlington and Chesterfield.

This special contest had for its objective the encouragement of the growing of cotton that would be expected to make lint stapling 1 3/16 to 1 5/16 inches under normal conditions. The special reason? "Because of the scarcity of good, long staple cotton and the ready demand for it by mills using 1 3/16 to 1 5/16 of Middling or better grade", said the contest announcement.

As a special stimulus toward this end six cash prizes ranging from $100 to $10 and totaling $250 were offered in each county by David R. Coker, well-known cotton breeder. Four provisions of the contest, details of which were agreed upon with the Darlington and Chesterfield county farm agents, and R. W. Hamilton, Clemson extension agronomist who has direction of the South Carolina five-acre contests conducted by the Extension Service for the past 12 years, were: (1) that contestants use Coker-Wilds No. 7 for non-wilt lands and Coker-Wilds No. 2 for wilt lands, these being recognized as two of the best staple cottons; (2) that these cottons be grown by farmers who have lands suitable for long staple cotton; (3) that farmers must understand how to handle and gin the cotton properly; and (4) that contestants must sign up in the state five-acre contest through the county farm agents and be governed by the regulations of that contest.



David R. Coker, of Hartsville, S. C., inspecting a field of long staple cotton on the Coker farm at Hartsville .

In determining the winners, the yield and staple length of each contestant were determined by the Clemson Extension Service workers and prizes were awarded on an "allowed yield" calculated by adding 10 per cent to the net yield for each 1/16 of an inch that the contestant's cotton "pulled" over one inch.

The Hartsville cotton market; not a bale of less than 15/16" was sold here during 1936 season

The results of this contest within the state contest more than justify the contestants and all concerned in the high yields of premium-commanding lint and consequent money profits to the contestants.

The 6 Darlington prize-winners averaged 698 pounds of lint per acre, and the average for the entire 37 Darlington county contestants was 522 pounds per acre. The average lint length of those who grew Coker-Wilds No. 7 was 1 7/32 to 1 5/16 inches, and of those who grew Coker-Wilds No. 2 was 1 3/16 to 1¼ inches. Bryce Gainey, winner of the first prize in this county actually made 725 pounds of lint per acre for which he received 16.3 cents per pound.

In Chesterfield county 28 contestants made an average yield of 490 pounds of lint per acre averaging 1¼ inches for No. 7 and 1 5/32 inches for No. 2. Chesterfield's first prize winner, Bill Arant, made an actual yield of 773 pounds of lint per acre measuring 1 5/32 inches for which he received 17.7 cents per pound.

As to profits here are noteworthy facts. Darlington contestants averaged 16.2 cents per pound for their cotton, which was practically three cents per pound premium over the price of cotton measuring 15/16 to 1 1/16 inches; and the yields figures show that these longer staples produce well. Gross profits per acre averaged $73.39 for Coker-Wilds No. 2 and $79.55 for No. 7. Likewise in Chesterfield, the contestants averaged about 17.8 cents per pound, which was a still larger premium, with profits per acre of $82.03 for No. 2 and $68.66 for No. 7.

COTTON-GROWING COP

Bill Arant, S. C. highway patrolman, made a yield of 773 pounds long staple lint per acre, received 17.7 cents per pound . . . .

Demand for Longer Staples

Farmers who have kept pace with the movement, toward longer staple production, through renewal of constantly improving varieties and strains, have profited, especially since the seed breeders have rendered the fine service of breeding up longer staple varieties that are in many instances practically as heavy yielders as the older short staples.

Now few mills want or use the shorter staples, insisting on cottons 15/16-inch to 1 1/16 inches long. Many mills, indeed, want still longer staples. Certain mills which five years ago bought only 1 to 1 1/16 cotton are now using 1 3/32 to 1 5/32, and the buyers are begging for 1⅛ cotton at premiums of 350 to 400 points, it is asserted. This demand, a noted cotton authority believes, will be bigger and bigger as mills install more machinery to handle the longer lints.

In short, it seems that we can go forward as much more in the next 10 years as we have come in the last 10 years. No less an authority than David R. Coker asserts that maximum yields of good quality long staples will enable growers of the eastern part of the Cotton Belt to produce cotton "as cheaply" as any other part of the Cotton Belt and thus hold their own in cotton production. And Major W. J. Tiller, veteran Chesterfield county agent, expresses the idea

in these words: "Now price rather than pounds spells profits."

Some Important Principles

From various parties concerned — farmers, extension workers, seed breeders, buyers — are gathered some important principles and practical guides the observance of which will help the long staple growers to greater success.

A Coker plant breeder determining staple length

1. Good seed, bred for high yield and long staple. And these of course need constant renewal first because of natural variation and second to be sure of keeping abreast of constant improvement in varieties and strains.

2. The best available soil, some soil types apparently being better for these cottons than others.

3. A good humus content of soil. If plants are checked from lack of moisture while fruiting, the length of staple will be affected. The same variety on two pieces of land with different humus content will not produce the same staple lengths.

4. Intelligent fertilizer and cultural practices to insure satisfactory yields. The value of increased potash in fertilizer seems established; and somewhat closer spacing of rows and plants is advocated by some for increased yields.

5. Preparation of seed cotton for ginning and expert operation of gins to guard against injury to an otherwise superior staple.

Some Pertinent Sidelights

If there has been a lack of market price differentials for the longer staples on our general markets, this lack is disappearing. "The buyers won't pay for the increased lengths," has been the complaint. Three points of importance here: First, the farmer must know his staple value and must demand it; second, good roads make easy hauling to those markets that will pay premiums; third, mills more and more are seeking the producers of longer staples.

"Where did you get your seed?" one farmer asks of another who sells his cotton for three or four cents premium per pound. Even the small farmers and renters catch the idea of greater profits and buy these better seed from those who get the premiums; and they in turn go back to the seed breeders for purer seed or later strains. Especially noteworthy is the fact that even cotton buyers become seed dealers in order to encourage greater production of the cotton their mills want.

Very interesting is the fact pointed out by John Napier, Darlington county agent, that among his contestants were a good half-dozen share-croppers and renters, and the further fact that four contestants were negro farmers—two renters and two owners. Thus the benefits are reaching down to even the so-called "lower third" of the farming population.

David R. Coker and Head Plant Breeder G. J. Wilds selecting superior cotton plants in a field on the Coker farm

Mills in Chattahoochee Valley Succeed in Venture in Teaching Textiles in High School

A group of Fairfax students listen while Joe F. Bridges, overseer of carding (third from left) explains the operation of a picker. Mr. Cannady, second hand, is second from right, Prof. P. C. Ramsay, supervisor of industrial education in the Valley schools (extreme left) looks on . . . . . .

Solving the problem of preparing the high school graduate to take his place in the community as a productive, contented citizen . .

By Horace L. Pratt

ON ONE EVENING this summer, a large group of citizens of West Point, Ga., and Lanett, Shawmut, Langdale, Fairfax and Riverview, Ala., met in the newly completed auditorium at Langdale to enjoy the program incident to the presentation of diplomas to 12 young men who had completed two years work in textiles in connection with and as a part of the regular high school course as offered in the several schools of the Chattahoochee Valley. (At the same time certificates were presented to students of the evening classes in textiles.) This program of work represents an entirely new type of trade teaching and fills a need that has long been recognized, but about which nothing previously has been done, so far as we know.

This method of co-operative trade teaching consists, in the main, of a two-year elective course in textiles and related subjects, offered to students showing an aptitude for this type of work and expressing a desire to take up textiles as a vocation. And as a part of the course the officials of the West Point Manufacturing Company offered the use of its mills as laboratories. To better explain this situation, allow the writer to quote from a statement from the Alabama State Department of Education: "The pupil goes into the mill, admittedly for laboratory experience, not for work. He is not there for production, but to learn. The situation is not a psuedo one; it is real. All about him the actual processes of the industry are going on. The problems he meets are real problems. The solutions he must find must be practical solutions, therefore the instructors who teach him must be men of practical training and job experience. Thus can we avoid the faults of the trade school, where things, at best, must be somewhat artificial . . . " The classroom activities and laboratory work in the mills were so coordinated that on the days that drawing frames, for example, were being studied in class the students would observe the process of drawing in the mill. The schedule calls for two hours work in the classroom and three hours work in the mill, five days per week for 36 weeks each term. Two units are given each year by the various high schools toward graduation, these counting on entrance requirements to Alabama colleges the same as any other elective subject.

This system was not designed to supplant the evening textile classes, on the one hand, nor to take the place of the great textile engineering schools on the other hand. The first is the result of efforts to help

the man already at work in the mill, and is an essential function in the industry. The latter should be helped by this new method of trade teaching, for after two years of study in this fascinating field many students will want to continue their studies in the more advanced engineering schools where their efforts will be awarded with a degree. (The writer knows for a fact that the dean and the professor of textiles of one of the South's leading institutions were so impressed with this experiment that they have encouraged some of the first graduates to attend their school.)

But a large group of boys, who for various reasons will be unable to continue their studies at higher institutions of learning, will be fitted by this two years of vocational training to go into the mills, not only prepared to earn wages, but with a substantial knowledge of the employer's problems, his policies, his attitudes and his objectives. They will know something of the history of the great textile industry and its place in the economics of the day. This knowledge, if rightly used, should be of inestimable value both to the student and to his employer.

The Chattahoochee Valley Times gives Prof. P. C. Ramsay, formerly superintendent of the Fairfax, Ala., schools, credit for having originated the idea for this type of vocational training in the high schools. Prof. Ramsay, in turn, credits E. R. Plowden, state supervisor of trade and industrial education of Alabama, with being father of the plan. Be that as it may, to Professor Ramsay belongs the credit for putting the plan into operation, securing instructors, selling the idea to the school officials and to the boys and seeing it through two years of ups and downs. A mass of details had to be worked out to fit this new program into the regular school curriculum and into the operating schedules of the mills. Courses of study had to be mapped out and as this was in a true sense a pioneer project there were no well-marked roads for Professor Ramsay and his assistants to follow, but be it said to their credit they have blazed a trail that can easily be followed by any textile mill high school.

Aside from the cultural value of a high school education, which few will question, there has for many years existed in the minds of many thoughtful people a doubt as to the practical value of our high schools as at present constituted. Many have felt that unless the student was going on to college, or unless he subsequently secured a clerical position, (and even here he would usually need special training), that perhaps he was little better off than his fellow student who quit school and went to work after he had completed the ninth or tenth grade. In an effort to remedy this fault many schools have for some years provided courses in manual training for the boys and home economics for the girls, and in the rural schools programs designed to fit the future farmer for his task have been set up. But in the case of schools in the industrial centers after the manufacturing companies have contributed rather heavily in taxes, and sometimes directly, to the support of schools in their communities, then it is necessary for them to bear all of the burden of training for the job the high school graduates from these same schools. This new method of vocational training of high school pupils, as set up in the schools of the Chattahoochee Valley, is in part, at least, a solution to this problem.

Now more about the details of this plan: The funds for this first venture of teaching textiles in high school were provided by the federal government matched dollar for dollar by the State Department of Education at Montgomery. This program was supported wholeheartedly by the Chambers County Board of Edu-

A group of students at Shawmut watch J. W. Lanier, second from left, overseer of spinning, explain the operation of the latest model Whitin long draft, large package spinning frames, recently installed at this mill . . . . . .

cation, of which G. M. Barnett is superintendent. The West Point Manufacturing Company co-operated by allowing the boys to come into the mills, where under the watchful eyes of skilled operatives they observed the operation and care of the different machines. The foremen and the second hands (assistant foremen) of the various departments explained the reasons for each process, the production schedules, waste control, etc. From the instructors in the classroom the students learned the history of textiles, something about the cotton fiber, the theory underlying each process and the first steps in textile mathematics and calculations, as well as the first principles of designing. To give an idea of the thoroughness with which each subject was treated we reproduce herewith a specimen sheet from the outline of the course of study (Fig. I). Mr. Ramsay, in working this out, had the co-operation of the foremen in the mills, who know from actual experience the relative importance of each process, thus enabling a practical, worthwhile program to be set up.

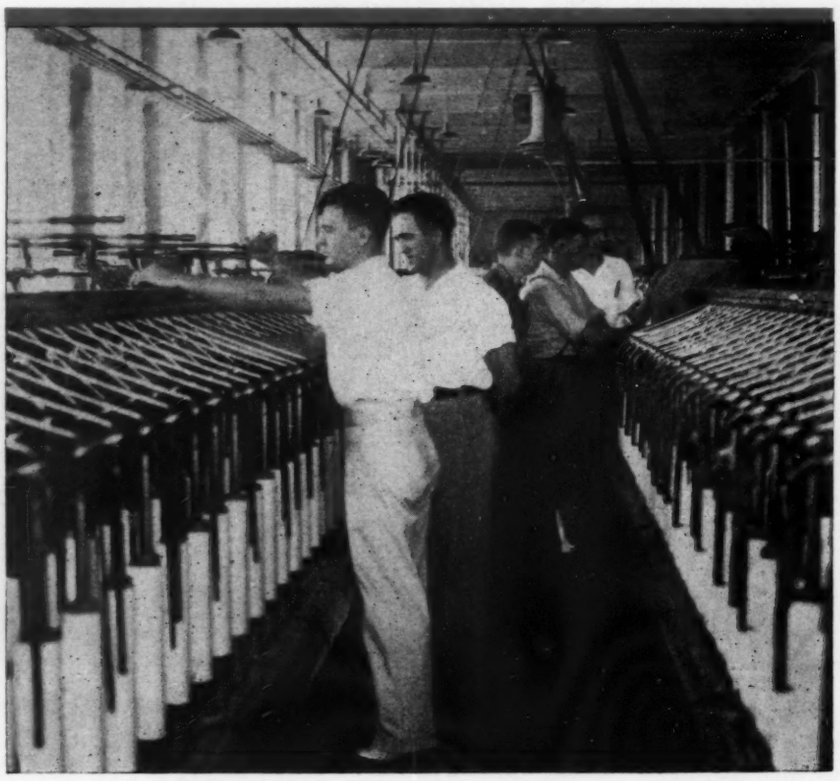
A Technically-Trained and Practical Faculty

Besides Professor Ramsay, as supervisor or co-ordinator, the faculty for the 1936-1937 term, just ended, consisted of Ted King, Lanett, (North Carolina State), Lea Clark, Langdale, (Auburn), and Yale Lewis, Fairfax, (Auburn). As there are five schools co-operating in this project it was necessary for a program to be worked out to enable the instructors to hold classes, daily, as follows: Mr. King—two at Lanett, one at Shawmut; Mr. Clark—one at Riverview, one at Langdale and one at Fairfax; Mr. Lewis—one at Fairfax, one at Langdale and one at Shawmut.

The text books used consisted of I. C. S. pamphlets, Cotton Mill Processes and Calculations, Tompkins, Clark's Weave Room Calculations, Nelson's Practical Loom Fixing, and various machinery builders' handbooks and catalogs supplemented by co-ordinated readings from trade journals such as COTTON, *Textile Bulletin, Textile World*, etc.

An additional feature of this type of training is that it enables boys who are already at work in the mills, and who can fit the school program into their schedule at the mill, to join the textile class and thus secure the benefits that accrue from this special training. This is especially adaptable to the boys who work on the second shift and who could not attend the regular evening textile classes.

That this new method of teaching textiles should originate in the schools of the Chattahoochee Valley is not surprising to people who are acquainted with conditions in this section. In the first place the schools are of the highest type with an outstanding leadership through the years, the list containing such names as W. T. Draper, E. I. Oliver, P. S. Owens, C. E. Lunceford, W. T. Harrison, P. C. Ramsay, T. H. Kirby and R. P. Kimbrough. Then the management of the mills of the West Point Manufacturing Company has always been behind every worthwhile program having for its aim the betterment of the people who work in the mills and who live in the communities that surround these textile plants. As early as 1914, three years before the passage of the Smith-Hughes act, an evening class in textiles, under the direction of W. T. Draper, was being held in the Langdale schools. Evening classes were soon established in all of the schools in these textile communities and from these classes have come section men, second hands, foremen and superintendents. In 1928 the Valley schools adopted the Standard Cotton Textile Evening Courses of



Students at Langdale studying the operation of slubbers in the up-to-date card room of the Langdale Division of the West Point Manufacturing Company. The second hand in carding, S. T. Hollis, is second from the right in the photo; Lea Clark, one of the instructors, is on the extreme left.

Study so that the students might receive, not only the increased benefits from these improved courses of study, but that they might receive some recognition for their effort in the form of credits and diplomas that would be recognized in all of the states co-operating in the plan. The officials of this company have always taken pride in supporting the schools in their communities and it was a pleasure for them to join hands with the federal and state governments and the schools in this new enterprise.

For the 1935-1936 term, when this experiment was first tried, 40 boys were enrolled: 12 at Lanett, 6 at Shawmut, 10 at Langdale, 6 at Fairfax and 6 at Riverview. And for the 1936-1937 term a total of 65 students studied in the textile classes, with 12 receiving diplomas, as stated at the beginning of this article.

As to what some of the leaders in the Chattahoochee Valley and of the Alabama School Board think of this project we are quoting as follows:

The Chattahoochee Valley Times, Lanett, says, editorially: "This paper wishes to express its appreciation and its approval of the textile course in the local schools, and to extend its congratulations to these twelve young men who are the first to be benefited by such a worthwhile addition to the school curriculum."

Prof. W. T. Draper, superintendent of the Langdale schools since 1914, and the first man, according to existing records, to teach a textile class in the Chattahoochee Valley, says, "I think the plan to include this type of vocational training as a part of the regular high school course is fine and promises good results."

In his address to the first graduating class in vocational textile subjects, Geo. H. Lanier, president of the West Point Manufacturing Company, remarked as follows:

"I feel that the vocational textile subjects offered in our Valley schools afford an opportunity to our high school boys to obtain in a very practical way principles of all cotton manufacturing processes. The importance of this should continue to grow as I believe this work has a definite place in our school program."

E. R. Plowden, supervisor of trade and industrial education, has this to say:

"On the basis of two years' experience with this program, the State Department of Education of Alabama endorses it heartily. All vocational education programs have for their objectives the increasing vocational proficiency of the job. In proportion as this objective is reached, we continue to discard an experimental program. I am reliably informed that the young men who have had this training during the last two years are outstandingly more efficient on the job and that they constitute a group with the necessary basic training for management to draw on for supervisory personnel in the years to come. This being true, we have definitely stamped the program with our approval."

Object: To develop a course of study, including laboratory experience and technical related subjects, for a cooperative program of Vocational Training in Textile (cotton) Industry; the purpose of which is to develop a knowledge and appreciation for, and certain basic skills in the principles of textile (cotton) manufacture.

COTTON YARN MANUFACTURE

Job Outline	Instruction in Class	Instruction on the Job
	1. Opening Department	
1. Opening bales of cotton.	1. Cotton Study; types, classes, grades, staple, ginning characteristics, chemical composition, hydroscopic characteristics proportion of lint to seed.	1. Trucking, pulling staple, classifying, grading, observation of ginning process, hydroscopic characteristics.
2. Blending.	2. Calculations necessary to obtain desired mixture as to grade and staple tinge.	2. Object of blending, arranging bales and placing cotton on automatic feeder apron.
3. Opener Tending: (a) Automatic feeder. (b) Bale breaker. (c) Vertical opener. (d) Horizontal opener. (e) Centrif-air machine. (f) Gyrator. (g) Trunking system.	3. Opener Tending: (a) Study every part of machine as to: 1. Object. 2. Operation. 3. Nomenclature.	3. Opener Tending: (a) Care of machine as to: 1. Unchoking. 2. Cleaning. 3. Removal of foreign matter. 4. Observation of working part.

Fig. 1—A specimen sheet from the outline of the course of study . . . . . .

Accident Rates in the Textile Industry During 1936

In a booklet released by the National Safety Council, Inc., 20 North Wacker Drive, Chicago, Ill., the accident rates in the textile industry for 1936 are given. The showing of textile mills in comparison with other industries was better in 1936 than in 1935. In 1935 the industry ranked sixth among 30 major industries, both in frequency and in severity; in 1936 these rankings advanced to third and fourth respectively. Middle-sized mills had the best 1936 records, averaging 6.98 for frequency and 0.29 for severity. Middle-sized plants also made the largest reductions from 1935. Silk and rayon mills had the lowest 1936 injury rates. Cord and cordage manufacturers made the largest improvement in frequency in comparison with 1935 and the needle trades made the largest reduction in severity. Reports covering 64 fatalities and permanent partial disabilities occurring during the last three years show that the principal mechanical causes of such injuries are "hazardous arrangement" and "improper guarding". The principal personal causes on the basis of the same experience are "wrong attitude" followed by "lack of knowledge or skill".

Lacquer Printed Fabrics Unharmed by Dry Cleaning and Ironing

Roxalin Flexible Lacquer Company, Inc., Elizabeth, N. J., reported that successive dry cleanings and pressings have no effect upon textiles with lacquer printed design, according to a survey made of their printing lacquers. Silks, taffetas, rayons, acetates, and cotton printed in all colors by stencilling, engraved roller and silk screen methods retain their original softness without loss of feel or texture it is said. Their durability has also been stimulated by the use of this product for decorating shower curtains and transparent umbrellas.

Perrin Collier Tells of EUROPEAN RESEARCH TOUR

Also Visited Textile Mills in England and Germany

By Perrin N. Collier

Vice-President and Staff Manager,
Callaway Mills, LaGrange, Ga.

As Told to Robert W. Philip

• *Perrin N. Collier, vice-president and staff manager of Callaway Mills, LaGrange, Ga., returned last month from a six-weeks' tour of industrial research laboratories in England, France and Germany. He was a member of a group of 40 American business executives who visited more than 30 research laboratories to see what advances Europe is making in industrial research. The tour was arranged by the National Research Council, under the leadership of Maurice Holland, director of the Council's division of engineering and industrial research. W. S. Nutter, vice-president of Goodall Worsted Mills Sanford, Maine, was another textile executive in the party.*

The tour was devoted entirely to research, in all types of industry. The Shirley Institute, at Didsbury, England, operated by the Cotton Research Association, was the only textile organization visited by the group, but Mr. Collier arranged personally to visit several mills in England and in Germany. He has given, for COTTON'S readers, some informal observations concerning the tour in the accompanying brief interview.—The Editor.

THE MOST striking impression I received from the National Research Council's tour of European industrial research laboratories was the remarkable advances that have been made in practical research and in its application to industry, its products, methods and problems. Some of the finest laboratories in England, France and Germany were opened to our party. We saw research, as it is being carried out in all kinds of industry, in connection with chemical processes, metallurgy, aviation, rubber, leather-research, glass manufacture, Diesel-engine-research, textiles and in the fields of pure science.

We were amazed to see the extent to which industry in the countries we visited is sponsoring, encouraging, financing, and using their research activities. There was evident everywhere a close relationship between those engaged in research study and those engaged in industry itself. We investigated research in several forms, some of it being subsidized by the governments, wholly or in part; some being conducted by co-operative organizations within the industries affected; some being carried out by private corporations. Everywhere we saw evidence that industry abroad has for years accepted research as an essential tool of industry. The recognition it receives is demonstrated by the large sums of money being expended for research, privately and co-operatively; by the character of equipment provided for this work; and by the high caliber of the men engaged in it, who obviously command the respect and attention of the men in industry.

Patience and Faith in Research Evident

We were struck, also, by the universal attitude of patience and faith in research demonstrated by those who support and use it. Sir Robert Pickard, head of the Shirley Institute, which is perhaps the outstanding cotton research organization in Europe, stated that he felt that 10 years is not too long a time to await results of a fundamental research project. This organization maintains a full-time staff of 300 trained men, and over 90 of these are recognized scientists with college or university degrees. The Shirley Institute further maintains large laboratories for scientific study of the cotton fiber and its processing, and operates as well a well-equipped practical mill laboratory for actual operating tests. In addition to their research activities at the Institute, the staff is available for study of day-to-day mill problems submitted by the member mills. In addition, they maintain the closest contact with the every-day operation of the members' plants. In visiting some of the cotton mills in England, it was very evident to me that the methods and systems worked out by the Shirley Institute are being used in actual practice by the manufacturers.

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For the inspection of cloth for defects, the Institute maintains a most complete department, furnished with snow-white walls, with indirect lighting reflected back from the walls; and equipped also with ultra-violet lighting, and with spot-lights in the corners of the room which throw slanting rays from different angles on the cloth being examined. It was remarkable to note the effect of these different types of light in looking at a sample of cloth. I mention this only as an inadequate illustration of the methods and thoroughness of the practical research work being done at the Institute.

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In every country we visited, particularly in Germany which is now operating under a strict nationalistic policy, we found research laboratories and mills expending much time and effort toward the development of satisfactory synthetic fibers to substitute for cotton. Incidentally, almost every textile man I encountered had strong criticism of "false packing" in the cotton received from America. This seems to be a paramount complaint abroad of the cotton they are importing from the United States.

In France we paid a visit to Madame Curie, daughter of the world-renowned co-inventor of radium, and in her own right a distinguished French scientist who is devoting her talents to research. One of our party told Madame Curie that he was engaged in research work, and would appreciate any suggestion as to how he might best direct his efforts, and we were all forcibly impressed by her significant reply. "Why," she said, "you simply can't *direct* research; you must let research direct *you*."

The schedule of the research party was so full that little time was available for visiting cotton mills, but I did have the privilege of going through three mills in England, and two in Germany. One of the English mills was the Dunlop Cotton Mills, Ltd., operated by the Dunlop Tire and Rubber Company. This plant is the "largest cotton mill in the world under one roof". It has 286,000 spinning spindles, making yarns from 2 to 36-ply; it is housed in one large seven-story building, with two large one-story sheds. The twister (doubling) room contains 3¼ acres of floor space, and the twisters require 2,000 h.p.

Visits to English and German Textile Plants

A great percentage of the English industry is located in the Lancashire section, of which Manchester is the center. This section was selected because of the naturally humid climate, and in those mills I visited (other than Dunlop which is relatively new) humidifiers were the exception rather than the rule. The English mills use a much larger percentage of female labor than we do in the United States; I was told the percentage of the labor force is between 80 and 85 per cent female, and they are for the most part younger women. There are no mill villages, as we know them, in England, the help residing in privately-owned tenement buildings in the mill centers. It is a custom for the operatives to wear wooden shoes with hob-nails (called clogs); and on a change of shifts it is quite a sight to see and hear them cluttering down the street in these clogs. The working time in English mills is 48 hours per week; a large number of the mills are running two shifts.

Trade unionism has advanced to a high degree in England, and wages, hours of work, duties of jobs, and work assignments are all governed by rules by which all mills must abide. Work assignments there seem to be about in line with ours—a spinner on 8s yarn attends 12 sides, for example—but their wage rates may be said to be about half of ours. I saw no long draft spinning, except in experimental stages, in the English mills I visited, and no evidence of long draft roving.

In Germany I saw two mills—one a spinning plant of 300,000 spindles, and the other a weaving mill with 150,000 spindles. These are in Augsburg, in Bavaria. The larger mill was celebrating its 100th anniversary when I was there. I was greatly interested to find that this mill maintains a complete village, composed of stucco flats; they have more than 400 units in these flats. The village maintains as well ample school facilities, an adequate bakery and dairy, and a home for retired workers.

As a result of our tour of the research laboratories in England, France and Germany, I returned home with a new conception of the achievements of research in those countries, and with a firm conviction that industry of all kinds in the United States can reap handsome returns from research, patiently sponsored, adequately financed, properly directed and intelligently related to the problems of industry. Textile manufacturing in this country is lagging, in comparison to the industry abroad and in relation to newer industries in this country and over there, in acceptance and application of the benefits of research, privately and as an industry. We have no more than scratched the surface, and I am convinced that a fuller recognition of research and an application of it to our work will pay us great dividends.

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The schedule of the research party was so full that little time was available for visiting cotton mills, but I did have the privilege of going through three mills in England, and two in Germany. One of the English mills was the Dunlop Cotton Mills, Ltd., operated by the Dunlop Tire and Rubber Company. This plant is the "largest cotton mill in the world under one roof". It has 286,000 spinning spindles, making yarns from 2 to 36-ply; it is housed in one large seven-story building, with two large one-story sheds. The twister (doubling) room contains 3¼ acres of floor space, and the twisters require 2,000 h.p.

Visits to English and German Textile Plants

A great percentage of the English industry is located in the Lancashire section, of which Manchester is the center. This section was selected because of the naturally humid climate, and in those mills I visited (other than Dunlop which is relatively new) humidifiers were the exception rather than the rule. The English mills use a much larger percentage of female labor than we do in the United States; I was told the percentage of the labor force is between 80 and 85 per cent female, and they are for the most part younger women. There are no mill villages, as we know them, in England, the help residing in privately-owned tenement buildings in the mill centers. It is a custom for the operatives to wear wooden shoes with hob-nails (called clogs); and on a change of shifts it is quite a sight to see and hear them cluttering down the street in these clogs. The working time in English mills is 48 hours per week; a large number of the mills are running two shifts.

Trade unionism has advanced to a high degree in England, and wages, hours of work, duties of jobs, and work assignments are all governed by rules by which all mills must abide. Work assignments there seem to be about in line with ours—a spinner on 8s yarn attends 12 sides, for example—but their wage rates may be said to be about half of ours. I saw no long draft spinning, except in experimental stages, in the English mills I visited, and no evidence of long draft roving.

In Germany I saw two mills—one a spinning plant of 300,000 spindles, and the other a weaving mill with 150,000 spindles. These are in Augsburg, in Bavaria. The larger mill was celebrating its 100th anniversary when I was there. I was greatly interested to find that this mill maintains a complete village, composed of stucco flats; they have more than 400 units in these flats. The village maintains as well ample school facilities, an adequate bakery and dairy, and a home for retired workers.

As a result of our tour of the research laboratories in England, France and Germany, I returned home with a new conception of the achievements of research in those countries, and with a firm conviction that industry of all kinds in the United States can reap handsome returns from research, patiently sponsored, adequately financed, properly directed and intelligently related to the problems of industry. Textile manufacturing in this country is lagging, in comparison to the industry abroad and in relation to newer industries in this country and over there, in acceptance and application of the benefits of research, privately and as an industry. We have no more than scratched the surface, and I am convinced that a fuller recognition of research and an application of it to our work will pay us great dividends.

Executives at Blue Ridge Discuss INDUSTRIAL RELATIONS

• *This thoughtful, interpretative report of the Southern Conference on Industrial Relations, held July 15 to 17, was written especially for* COTTON *by a prominent, progressive southern mill executive who attended all of the sessions. He has done a faithful job of reporting, translating into this story some of the thoughts he picked up by attending the conference.*

With Industrial Relations paramount in the thinking of every mill executive today, this summary will be helpful as a record of what some of the more progressive are doing in the way of collective thinking and exploring on the subject. We present it with the hope that it may persuade others to participate actively in these conferences in the future.—THE EDITOR.

THIS REPORT could be considered a venture or adventure in broad-mindedness. The experience is like most other adventures and may be somewhat like going into a chilly pool—you wonder whether you ought to do it or not, then you go to the water, finally plunge in, and find it is not as bad as you thought at first, but you discover later if you did not take a brisk rub-down it might have some after-effects.

The opening statement of the announcement of the 18th session of the conference on "Human Relations in Industry" held each year near Asheville, N. C., read as follows:

"*A MAJOR RESPONSIBILITY—Industrial Relations today is the outstanding problem of American industry. The events of the past year have emphasized as never before the necessity of giving the man-power side of industry the most capable administration available. This phase of management can no longer be delegated solely to a subordinate. Industrial Relations today is a major responsibility of chief executives.*

"*Moreover, the future mold and character of southern industry will depend largely upon the solution of this problem as well as its vital bearing on the future of southern current industrial relations questions will vitally affect the solution.*

"*In view of the unprecedented importance of the problem as well as its vital bearing on the future of southern industry, this subject will be the central theme for consideration at the annual Conference of Southern Industrial Executives.*"

Executives Meet First at Asheville

That this statement was taken pretty seriously was evidenced by the largest attendance in 18 years. There was an innovation in the program this year by having the executives meet for a day's session at Grove Park Inn, Asheville, prior to the beginning of the regular session on Thursday night. This change worked very well, as it was not only convenient, but the program itself was compelling. The following prominent leaders of business and industry were on the program, with subject discussed as noted:

"Industrial Relations, a National Problem," James O. McKinsey, chairman of the board of Marshall Field & Company.

"Industrial Relations, a Major Responsibility of Executives," John L. Perry, president, Tennessee Coal, Iron & Railroad Company.

"Attitude of Southern Industrial Executives Toward Current Industrial Relations Problems," Homer L. Ferguson, president, Newport News Shipbuilding & Dry Dock Company.

J. O. McKinsey, chairman of the board, Marshall Field & Company, set the pace for the conference—established a broad-gauged viewpoint for the executives, and gave a mighty challenge to the 150 or more executives of the leading industries of the South—saying that industrial relations is a national and a major problem. Comments on Mr. McKinsey's speech were many and complimentary.

Mr. McKinsey gave the background of Industrial Relations, tracing the development and growth of these relations from the simple relationships following the beginning of the industrial revolution up to the present complicated mass-production, mass-relationship situation. Among the many points that he made the two that challenged the thinking of the group were the following:

He stated that Industrial Relations problems had arisen and magnified because of mal-adjustments created by our economic situation; secondly, that in many instances one group had been unfair to the other, and had tried to take and keep the advantage, this resulting in harm to all groups, including the public. He further stated that no particular group had been completely free from this practice.

Somewhat as a theme for the entire conference, because it was continually mentioned during the following days, was the very complete and searching statement as to the necessity for proper attitude of mind. Mr. McKinsey pointed out that if we are to successfully deal with these major problems in Industrial Relations we must have an attitude of mind that is *open;* that is *research;* that is *experimental;* that is *evolutionary;* that is *philosophical.* He claimed we should have an open mind in order to see both sides of a question; that we should have a research mind to get whatever facts were available; that we should be experimental in trying out various plans after we had secured the facts then available; that our minds and thinking should be evolutionary so that we would know how to make progress based on our experiments; that we should be philosophical in our approach to all of these problems, and realize that we would always have problems; that progress creates problems, and that if we did not have problems we would have stagnation.

John L. Perry, president of the Tennessee Coal, Iron & Railroad Company, gave a very helpful and forceful analysis of the responsibility of executives towards these major problems of Industrial Relations. He urged the executives to recognize the trends; to deal frankly and intelligently with foremen and other supervisors; to see that the young people and others get the right frame of mind; further, to be fair with everyone.

The General Conference at Blue Ridge

After the adjournment of the one-day session of executives at Asheville a group of around 400 gathered at Blue Ridge to carry on the main conference, which ran for two full days.

The members of this conference were a mixture of executives, managers, superintendents, foremen, rank and file workers, personnel men, etc. In almost ideal surroundings, this group listened to speeches, talked to each other, swapped experiences, and attended lectures and discussions just as if they were in school. The main difference, however, was that practically all of these people brought to the lecture halls a wealth of experience, knowledge and ideas, born of day-to-day work in the mills and other industries of the South. They acted as informal guests at a home—they respected the conference as a host, and the speakers did likewise, at least for the most part.

There was at least one speech that created a great deal of interest, even if it did not bring agreement. This was a talk given by Assistant Secretary of Labor Edward W. McGrady. A rather unfortunate, but funny, episode developed at the meeting after Mr. McGrady's speech. A former Congressman, W. D. Upshaw, of Georgia, who, neither a guest nor member of the conference, wandered into the conference, knew Mr. McGrady when he was a lobbyist (in the halls of Congress) for the American Federation of Labor, and sent on his own accord, and over his own signature, a telegram to Miss Perkins thanking her for sending McGrady to make the speech. The newspapers got the thing messed up and reported that the conference itself gave McGrady an ovation and sent him a telegram. The conference, realizing that none of this statement was true, and realizing further that they were taking an adventure in broad-mindedness, simply laughed at the episode.

No one who does not attend the annual conference on industrial relations at Blue Ridge can adequately or fairly evaluate its significance in connection with this major problem of industry. That its possibilities are being recognized is evidenced by the increasing number of mill executives who participate. With proper direction, and earnest support, it will continue to be an influence for better understanding and peace in industry . . . . . .

Industrial Relations as an Old Problem

Thomas G. Spates, director of Industrial Relations of the General Foods Corporation of New York, gave a historical perspective of Industrial Relations, showing there have been major movements in this field for the last 25 years; further, that a Congress committee reported as early as 1912 that the problem of Industrial Relations was the greatest on the American horizon except that of the form of government itself. Mr. Spates stated that industrial peace (the conference assumed he meant lack of industrial war) had been achieved in various places through one of the following three channels: 1, legislative; 2, collective bargaining; 3, technique of personnel administration. He pointed out that we had done very little through legislation up to the present; secondly, that collective bargaining had not been too general, and that many companies had worked through the technique of personnel administration.

Following his speech some of the members of the conference privately called to Mr. Spates' attention that although his analysis might be true for certain large industries in certain large states, that in the South neither of the three things he mentioned was applicable. He was told that possibly less than 10 per cent of the mills and other industries in the South had personnel departments or knew anything about the technique of personnel administration, but it had been pretty generally handled on a more or less personal basis. These same people admitted to Mr. Spates that industries in the South were rapidly taking on personnel work of a more formal nature, and were recognizing the trends, and hoped to profit by the experience of other sections and other nations.

"The Function and Training of Supervisors to Deal with Industrial Relations" was the subject handled by Glenn Gardiner, assistant to the president, Fortsmann Woolen Mills, Passaic, N. J. Mr. Gardiner spoke of the foreman as a salesman for the company, a salesman of the policies and position of the company, a salesman from the workers to the management of the company.

Ten Industrial Relations Rules for Management

A Georgia mill manager gave in a clear, concise, straightforward manner his idea of what the management's approach should be towards the present day Industrial Relations problems. This was H. Gordon Smith, general manager of the tire cord mills, U. S. Rubber Products, Inc., who gave the following ten essentials for good Industrial Relations:

1. **Pay the highest practical wages.**
2. **A full day's work for a full day's pay.**
3. **Give adequate attention to selection and training.**
4. **Avoid unsound concessions.**
5. **Develop employee self-respect.**
6. **Make the separate responsibilities of management and employees clear.**
7. **Avoid a high-hat attitude.**
8. **Protect and promote the safety of employees.**
9. **Maintain high standards.**
10. **Be consistently fair.**

Edward W. McGrady, who is assistant to Miss Frances Perkins, of Washington, D. C., furnished whatever "fire-works" the conference experienced. He was dynamic, almost belligerent; he seemed sincere, almost fanatical in the presentation of his subject. The subject assigned to him by the conference was "Labor's Responsibility for Industrial Relations", but Mr. McGrady exercised the prerogative of all prominent men and made the speech he wanted to regardless of the subject assigned to him. If the majority of the conference was to name the subject of his speech, after he had concluded, they would have said "What McGrady, Perkins and Roosevelt Expect the Southern Industries to do About Unionization of Their Workers."

Assistant Secretary of Labor Speaks

Mr. McGrady mentioned to the conference that he would be unable to talk except from manuscript, and most of the conference members realized that government men must stick to their manuscript, and must have that approved beforehand by their superior, therefore, they understood Mr. McGrady's statement that he must stick to his manuscript, but every few minutes Mr. McGrady would leave his manuscript and give vehemently his own opinion of what ought to be done.

"If we are to deal successfully with Industrial Relations problems, we must have an attitude of mind that is open; that is research; that is experimental; that is evolutionary; that is philosophical."—J. O. McKinsey.

Mr. McGrady gave a little biographical sketch of his own life, then plunged into a very interesting talk on the present day situation. He spoke of his own association with A. F. of L. and of Mr. Gompers. He told of new leadership that was developing in the various unions of the country, citing various college men, who because they could not find jobs to fit their professional training, went into the work-a-day-world and became heads of unions. He stated that workers wanted to be a part of the organization, that they wanted to co-operate, and he insisted that all forms of co-operation must depend upon collective understanding, and that labor must bargain through their own chosen representatives. He belittled, without naming them, the four steel men, who he stated were very much unenlightened in their relations with the 100,000 or more steel workers, and in their refusals to make agreements, etc. He claims that common sense did not prevail in these cases, and he referred in many instances to "silly managers" and "lack of common sense". He defended labor leaders, collective bargaining and contracts, and stated that labor had respected contracts, citing the unions of railroads, miners and newspapers as examples.

Came out for CIO—The conference was somewhat shocked when Mr. McGrady, without mentioning the CIO by name, stated without equivocation that industry-wide collective bargaining was the most satisfactory arrangement for the great mass-production industries. He spoke of automobile strikes, mentioning seven different strikes, involving seven different companies at seven different times, and stated it would have been much more efficient and satisfactory to bargain on wages, hours and working conditions for the whole industry at one time.

Some of the conference members felt, after the first shock, that it was much better to have had Mr. McGrady to come out frankly and openly for the CIO, and to outline his and the Department of Labor's position so that we might know just what the situation is, and what could be expected.

Blair Blanton's Rebuttal

The tension created by Mr. McGrady's speech was eased by a very interesting and humorous speech by Blair Blanton, chairman of the employee representatives, of the Newport News Shipbuilding Company, Newport News, Va. Mr. Blanton made one statement that was very humorous when he stated that "I am a unique thing in America today—I carry an electrical union card, and I got it without the necessity of two acts of Congress and three decisions of the Supreme Court of the United States."

The closing session of the Conference was a summing up of the various major problems that had been introduced by the various speeches.

Dr. Howard Odum of the University of North Carolina had as his subject "Industrial Relations and the Social and Economic Life of the South". Dr. Odum gave a very broad-gauged, challenging picture of the situation as it exists over the world today, and then tied it down with Industrial relations in the South. He spoke of conditions in the world in general, the situation as it prevails in the United States, and then he dwelt at length upon the South and its future. Dr. Odum possibly knows more about the South and its problems that any other man in the South. His recent volumes on "Southern Regions of the United States" are classics in their fields.

Dr. Odum stated that the South would, in the next generation or two, contribute to the United States and to the world, the greatest share of wealth and culture, and leadership. He claims that the South now has natural resources without the capital for their development; further, it has human resources without the training to carry on, but that southerners are facing their problems fairly and squarely, and that they will come through with the solution and would work out Industrial Relations problems for the benefit of all concerned, and do it in a statesman-like and peaceful manner.

The active cotton spindles in the South were 66.8 per cent of the total for the United States in 1933 and for the year 1936 this total had increased to 72.3 per cent.

If a man's trousers wear out quicker than his shoes —he's making contact with the wrong end.

With an overhead cleaning system the lint is gone with the wind.

Better Weaving Conditions Secured by Temperature Controls on Slashers

By Francis A. Westbrook

INDUSTRY progresses, but not always along a solid front. This elementary description of one method of slasher temperature control will, we know, provide groundwork for many readers on a development already recognized as a distinct contribution of a related industry to greater efficiency and economy in textile warp sizing.

WHEREVER automatic instrument control of cotton slashing has been properly employed there have been several important improvements which have been more than enough to justify the cost of installing the control equipment. The reason for this is that with the help of the automatic control it is possible to maintain any desired set of conditions in the cooking kettle, storage tank, size box and drying cylinders with great accuracy and also to reproduce them at any time. This naturally makes for uniformity in the size and of the warp which goes to the looms and in this way better control of the weaving operations is made possible. A uniform quality of product is made far more certain and operating economies result which are very much worth while. That is, there is a decrease of steam consumption in slashing, frequently a reduction in the amount of size used, decreased warp breakage in weaving and decreased shedding in the looms because the slashing operation is performed more effectively and the yarn comes out in better condition for weaving.

Automatic control equipment has been installed with success in numerous mills throughout the country but before considering specific cases and what has been gained it will be interesting and helpful to discuss for a moment a typical set-up, and see exactly where the instruments should be installed and what functions they can be made to perform. Fig. 1 shows diagrammatically a slasher control installation, indicating the different steps of the slashing operation and the location of the various instruments in the installation in question. It will be noticed that the latter are grouped in two places, on panels where they show what is happening close to each operation.

Thus the panel at the size storage tank carries two automatic control instruments. The larger one at the right is an elapsed time temperature recorder-controller. This provides for cooking the size for a predetermined length of time at a specified temperature, according to the setting of the instrument, after which it automatically shuts off the steam and lights a signal light to call the attention of the operator to the fact that the cooking has been finished. During the cooking the temperature is of course held at the proper point by the controller which, by means of air pressure, operates a valve in the steam line which supplies the kettle. The temperature, and the length of time for which it is maintained, is recorded on the chart of the instrument so that anybody can tell what has been going on.

The other instrument at the left of the panel at the size storage tank is an indicating temperature

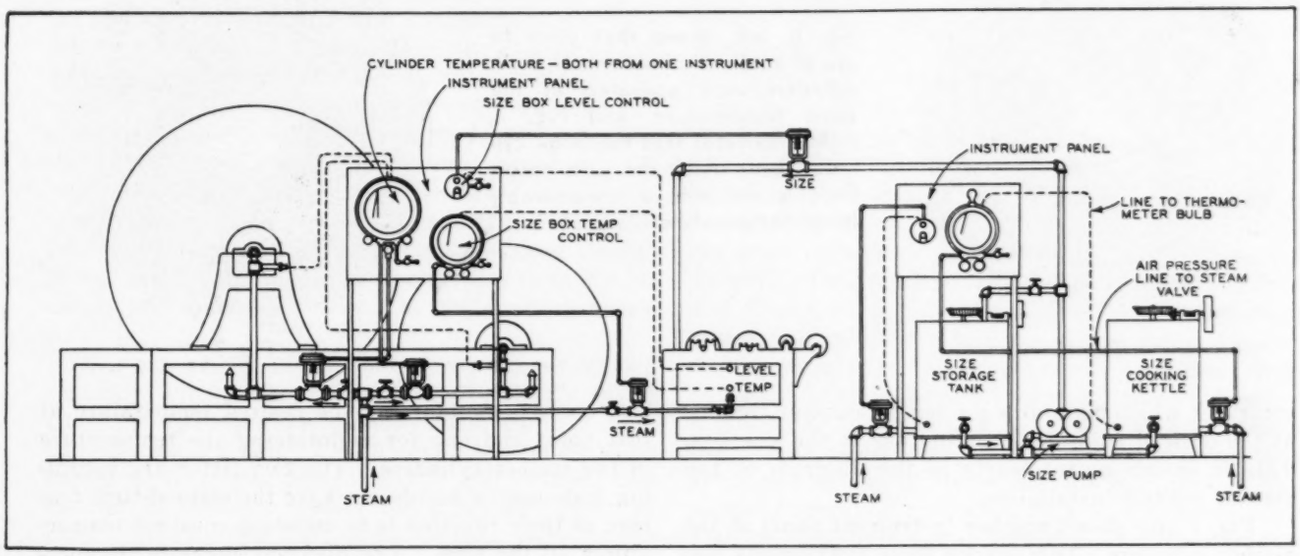


Fig. 1. Slasher control installation, indicating the different steps of the operation.

Control Records on the Size Kettle

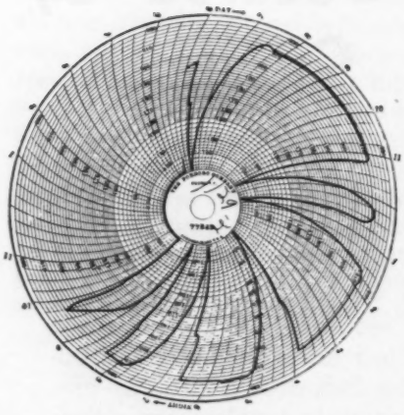


Fig. 2

Fig. 2, left, depicts temperature control record regulated manually. Fig. 3, right, shows control record for 24-hour period operated by automatic instrument. By the former method, no two batches are cooked the same length of time whereas with the instruments each batch is cooked for the same period of time . .

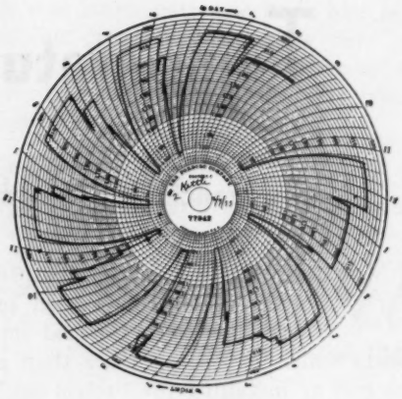


Fig. 3

Control Records on the Size Box

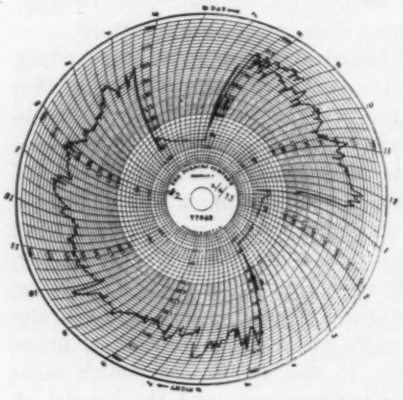


Fig. 4

Fig. 4, left, is record of size box control operated manually (note variation in temperature), and Fig. 5, right, illustrates the even temperature maintained in the size box (or the constant level of the size mix in the box). Note the irregularity of the former and the evenness of the curve on the latter record . . . . . .

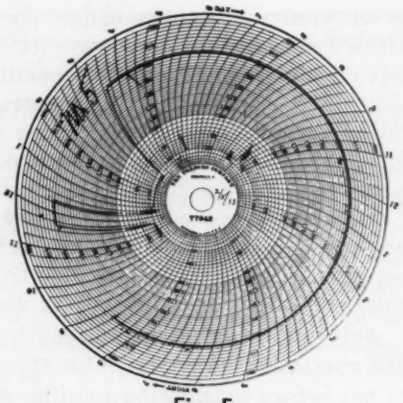


Fig. 5

Control Records on the Cylinders

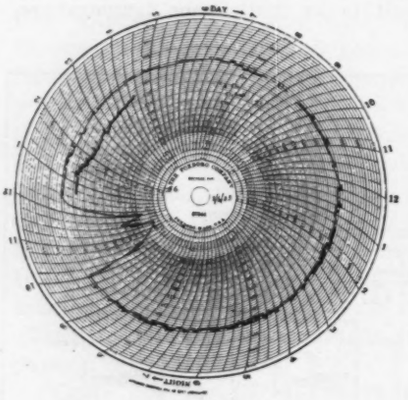


Fig. 6

Fig. 6, left, shows that prior to use of automatic instruments, both cylinders were operated at the same temperature, and Fig. 7, right, illustrates that the large cylinder, over which the yarn passes first, is run with a considerably lower temperature . . . . .

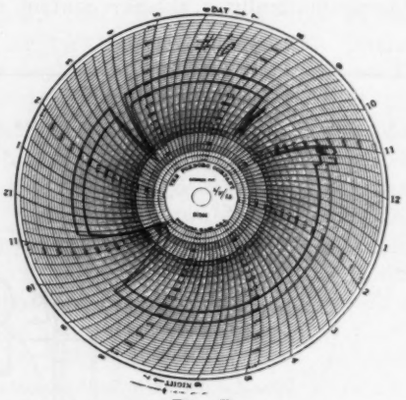


Fig. 7

controller which maintains the temperature of the size at the desired point for eventual use in the size box. This is shown quite clearly in the diagram of the slasher control installation.

Fig. 1 also shows another instrument panel at the slasher cylinders. This carries three instruments, one for maintaining the proper level of liquid in the size box, one for maintaining the desired temperature at that point and one for maintaining the temperature in the slasher cylinders. The two latter are recording instruments but do not have the elapsed-time feature as their function is to maintain constant temperatures all the time. The diagram suggests the location of the temperature bulbs and of the steam valves,

Improved Weave Room Results Obtained with Automatic Control in Several Mills

Type of Fabric	Warp No.	Ends	Filling No.	Before Control Warp Stops Per Loom Per Hour	After Control Warp Stops Per Loom Per Hour	Percentage Decrease
36" — 48x48—7.65	31	1836	42	0.682	0.367	46.2
36" — 56x44—7.33	31	2018	41	0.287	0.222	22.6
38½"— 44x40—8.20	31	1690	40	0.330	0.222	32.8
34½"— 56x44—7.65	31	1944	41	0.273	0.236	13.5
37" —100x60—4.10	31	3700	42	1.200	0.984	18.0
81" — 64x68—1.59	21	5240	25	0.936	0.625	33.2
72" — 68x76—1.63	21	4968	25	0.858	0.621	27.6
81" — 68x76—1.45	21	5580	25	0.735	0.540	26.5
36½"— 72x80—4.70	30	2656	38	0.533	0.451	15.4
40" — 48x48—7.00	30	1925	39	0.815	0 601	26.2
41" — 56x52—6.10	30	2306	40.5	0.632	0.550	13.0
39" — 68x76—4.50	30	2676	38	0.541	0.345	36.2

operated by air pressure from the instruments.

The operation of the level controller in the size box is based on temperature changes. That is, the bulb of the controller is placed at the desired level for the solution in the size box. As the level begins to get low on the bulb so that the cooler air strikes it the controller causes the opening of the valve in the pump line from the size storage tank so that size solution flows in until the bulb is covered again and its temperature raised by the hot size to the point where the controller cuts off the flow.

The installation of these control instruments is not difficult on existing equipment and the details for doing it can readily be obtained from the instrument manufacturers. Fig. 1 is a typical diagram but the local conditions in a given plant are very likely to call for variations in detail, particularly on the kettles. However, the general principles involved, and the advantages gained, will not be changed.

Maintenance of accurate temperature control in the slasher cylinders is of great importance in that the maximum allowable content of moisture may be permitted to remain in the yarn. It is not necessary to dry it more than is actually needed in order to make sure that there will not be so much moisture that the yarn will mildew, as is so often the practice with hand temperature control. This means that less evaporation has to take place on the cylinders and therefore the speed, and consequently production, of the slasher may be increased. Furthermore, the yarn can then be made to emerge from the slasher in the best possible condition for the weaving operation. The result is a substantial decrease in warp breakage and shedding which means greater production and less loss at the looms. This is furthered by having the size itself in the best possible condition in the size box by maintaining the best temperature with uniformity. The figures given in the table show the improved results obtained in a weave room from the accurate and automatic control of the slashing operation.

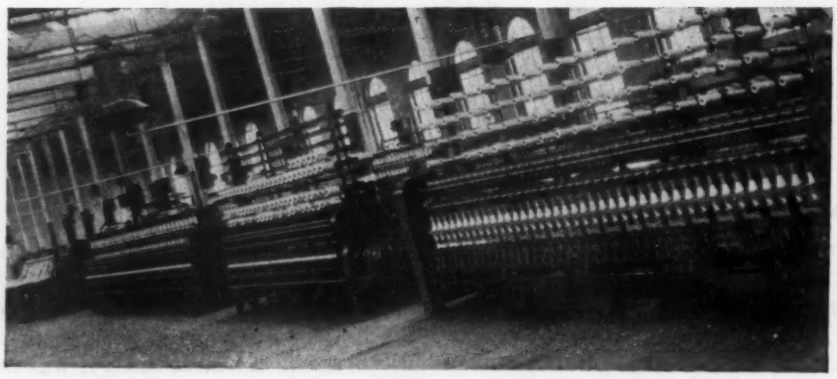
The superiority of automatic control over manual control is shown very strikingly in the sample charts from the recording instruments installed in a well-known southern mill. Fig. 2 shows the temperature record with manual control and it will be seen that no two batches are cooked for the same length of time. In all probability some batches were cooked too much and others not enough. Fig. 3 shows the chart for the elapsed time controller on the size kettle. It covers a 24-hour period. The time for cooking at 212 degrees comes out very clearly in each batch, as the instrument maintains that temperature automatically for slightly over an hour in each instance and then shuts off the heat. In most cases it was not possible to draw off the cooked size into the size storage tank right away so the instrument was re-set to maintain the temperature at 200 degrees until such time as there was room enough in the storage tank. When this was done the kettle was re-filled, the instrument was re-set for the cooking temperature, and the cycle repeated. All this is shown unmistakably in the record and can be preserved and inspected at any time by the management.

Figs. 4 and 5 are very interesting for they show the records of size box temperature obtained by manual operation of hand valves and automatic control respectively. When the recorder-controller was first put in place the control mechanism was left disconnected and the recording feature was put in operation. The instrument was then covered and the operator was told to go ahead and control the temperature in the usual way by the hand manipulation of the steam valve. The result is the temperature record Fig. 4.

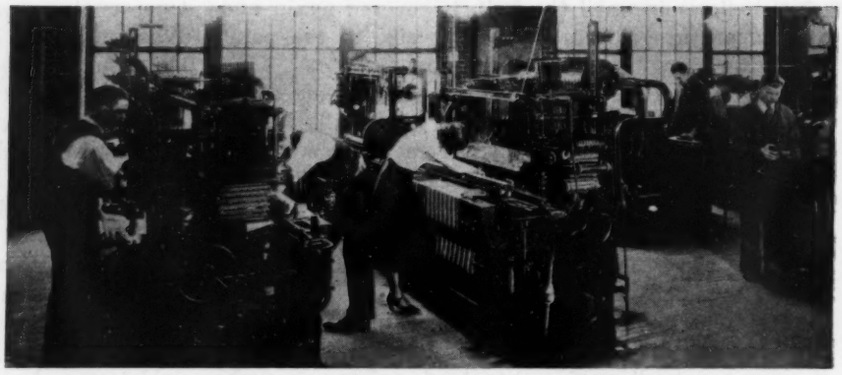
After this the automatic control was placed in the operation and the constant temperature record shown in Fig. 5 was obtained.

The same thing was done with respect to the cylinder temperatures. Fig. 6 and Fig. 7 gives these records for both cylinders, as this is a dual instrument with two pens, for manual and automatic control respectively. Thus the former (Fig. 6) indicates very clearly that both cylinders are being operated at the same temperature, about 238 degrees. With automatic control (Fig. 7) shows that the large cylinder, which is the first over which the yarn passes, is run considerably lower than with manual control; while the small cylinder is operated at a lower temperature as well. This means that less moisture is removed and that consequently the slasher may be operated faster. Of course the accuracy of the automatic control is indicated by the smoothness of the lines. Thus, as already stated, the best operating temperatures for a given size and yarn may be selected and the instruments may be depended upon to control it accurately. It is not necessary to impair the efficiency of the slashing operation by maintaining temperatures other than the best in order to provide a margin of safety against the uncontrollable variations which are bound to accompany even the most skilled manual control.

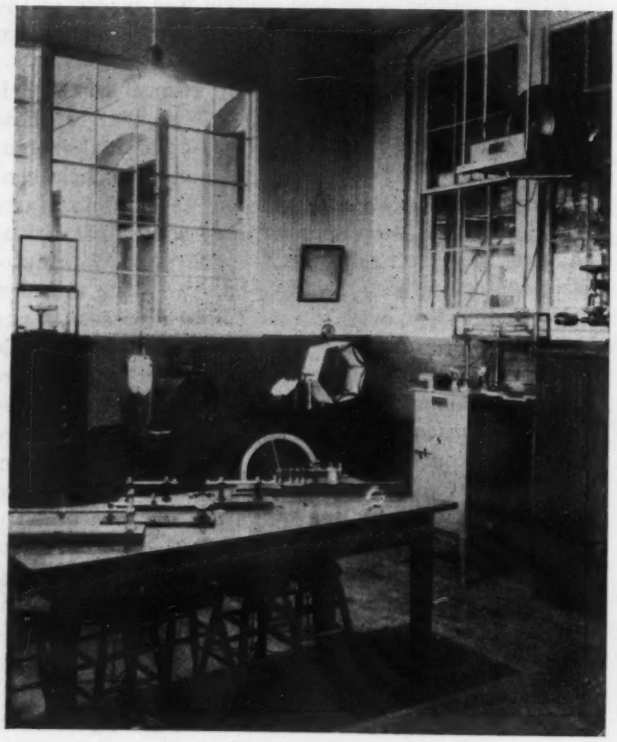
TEXTILE SCHOOL VIEWS

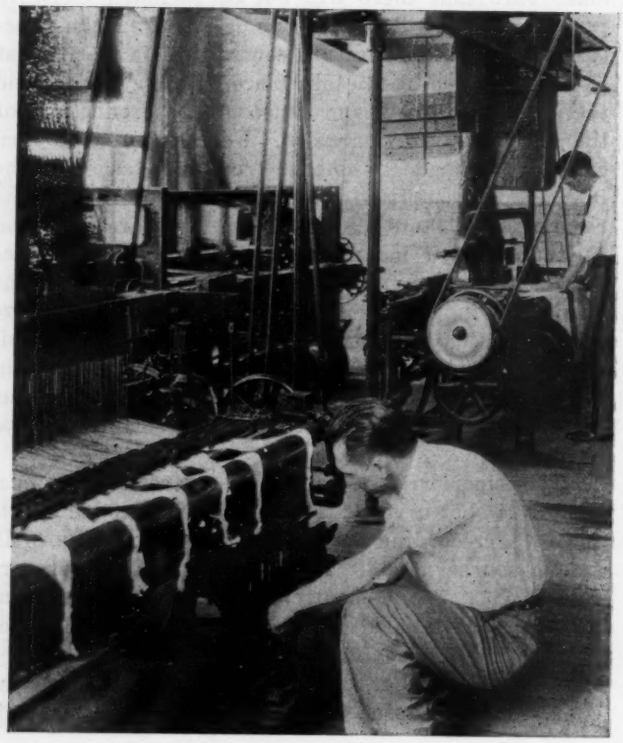


Left: Twisting, spinning, and carding at North Carolina State College, Raleigh, N. C. Lower: A class in dobby weaving at the Rhode Island School of Design, Providence, R. I.



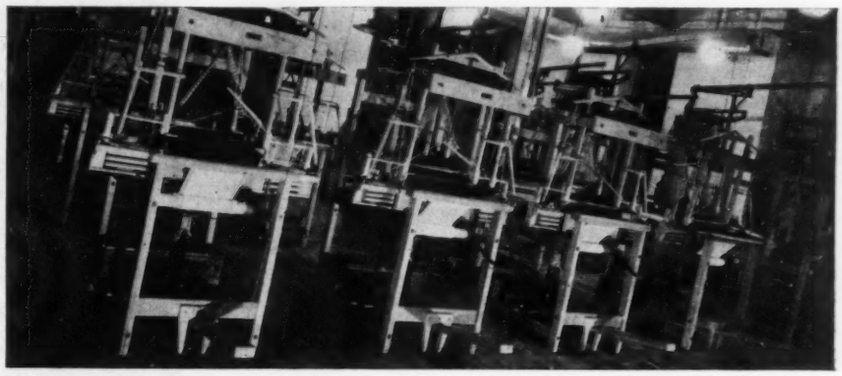
Lower left: The well-equipped testing laboratory at the New Bedford (Mass.) Textile School. Lower right: Jacquard weaving at Clemson (S. C.) College . . . . . .



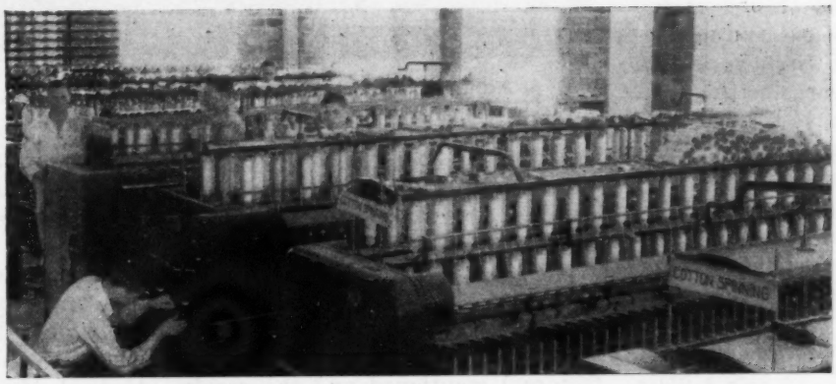


In recent years the textile industry and the textile schools have been brought into closer relationship with each other. And more and more has the industry recognized the value of the schools. There are about a dozen schools, situated in all parts of the manufacturing area, devoted to the teaching of textiles, the subjects covering a wide diversity of fibers, methods, and machinery. Of late have been conferences of the heads of all of the textile schools, working to ascertain the needs of the industry, and the manner in which the schools may best serve the industry.

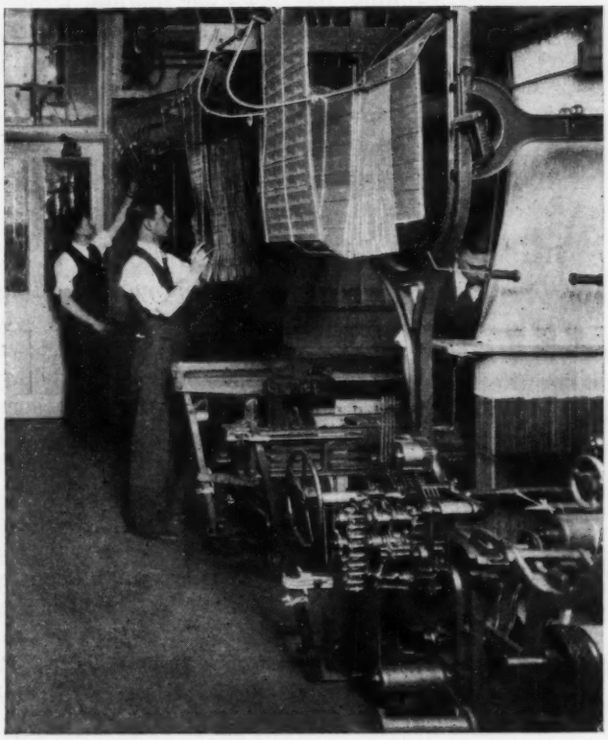
Because of their specific bearing on the textile business, and because of the general interest of the industry in the schools, these views of the textile schools, selected at random, are presented. Others will appear in an early issue.

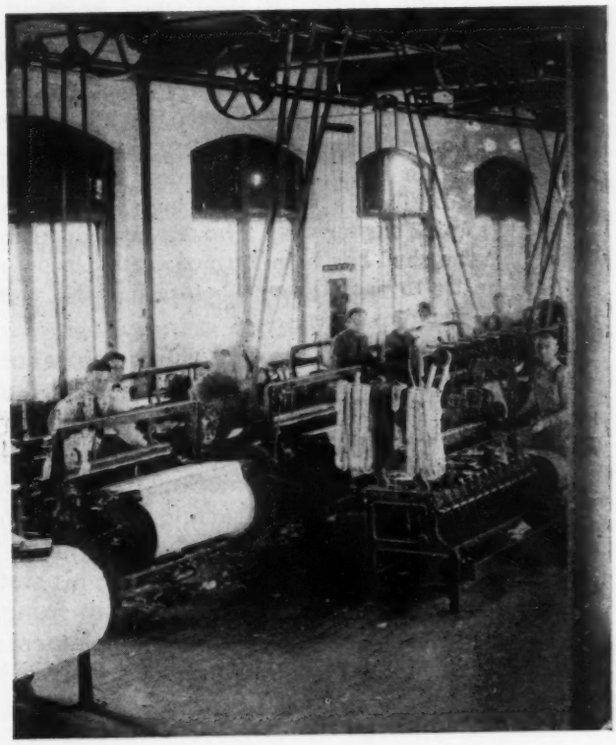


Right: A battery of hand looms equipped with dobbies at the Alabama Polytechnic Institute, Auburn, Ala. Lower: Spinning department at Texas Technological College, Lubbock, Texas . . . . . .



Lower left: Jacquard weaving at Philadelphia (Pa.) Textile School. Lower right: A class in weaving at the A. & M. College of Texas, College Station, Texas . . . . . .

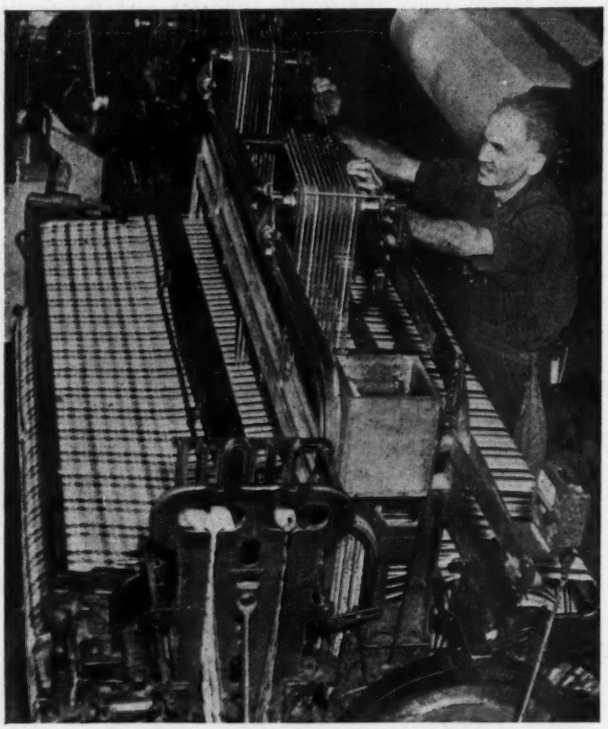




Methods of Fixing Looms

(Article 2, The Harness)

By B. H. Hawkins



Adjusting the harness on a dobby loom

THE SETTING of the harness on a loom is very important and should be given more than just ordinary attention. Some mills make a practice of having the loom fixer go back to the loom, after having tied on a new warp, and inspecting the harness for a final setting after the cloth has been removed. From experience I have found that this re-setting is necessary, but once done, the harness will usually remain set correctly—barring trouble such as jack straps, harness straps or one of the hooks or screws breaking or pulling out and not being replaced properly. Some loom fixers acquire the very good habit of checking the harness setting as a precautionary measure when they have a flag up on a loom. It may be totally unnecessary, but this checking requires only a few seconds and may prevent a future flag, so I think it a good habit.

The timing of the harness cams is a point that is arbitrary. It depends on a number of things some of which are as follows: the style of goods being run, the construction of the cloth, the face desired on the cloth, the weight of the goods, the width of the loom, and the speed of the loom. To look a little further into some of these it readily can be seen that with a light fabric the shed could be opened quicker and with less strain than it could on a heavy fabric. Therefore, the harness cams might be timed a bit later in this instance than with the heavy weight fabric and still form the shed satisfactorily. Looms running at a high rate of speed are timed earlier than a loom running at a low or medium speed. This is because the high speed looms are made to pick earlier than a low or medium speed loom, thus the shed has to be formed earlier in order for the shuttle to pass through before it starts closing. I have found as a general rule that the higher the speed the earlier the loom picks and consequently the earlier the cams have to be timed. On wide looms the harness cams are made with a longer dwell, as the shed must stay open longer in order that the shuttle may pass through it. This is due also to the slow speed at which most wide looms are run. The longer the dwell on the cams the quicker the shed has to be formed resulting in more strain being placed on the yarn in forming the shed. A one-half dwell cam is the best one to use for all practical purposes.

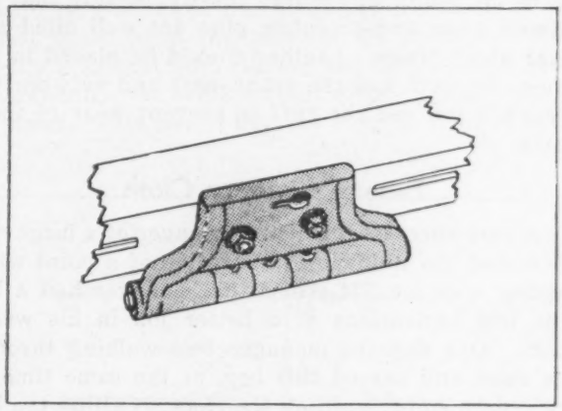
As I said before, the setting of the harness and the timing of the cams are arbitrary points, and generally each mill has a rule of its own by which all harness and cams are set. The rule depends on the factors I mentioned and the results obtained after experimental settings. For a 40-inch loom, 80x80 construction, running 160 picks per minute, I found that the harness set level with the reed 2¼ to 2½ inches from the fell of the cloth gave good results. This may not prove to be correct in all cases; if not, make a few experimental tests, keeping records of the results and the settings will be found that produce the best results on the looms.

Other Factors of Harness Setting

Harness cams are so designed that the shed should be opened with a smooth even motion and not cause the harness to be jerked either up or down. A condition you have probably noticed at some time is that the treadle balls or studs are badly worn. When any of these parts are worn it is best to replace them immediately as they will continually give trouble and shorten the life of the harness immensely. Be sure that the treadle ball stud is in contact with the

THIS is the second installment of a series on practical loom fixing methods. The first appeared on page 43 of the July issue and discussed the picking and parallel motions. This article takes up the proper setting of the harness, the beating-up motion, and cover on the cloth. The author is not offering his statements as cut-and-dried laws of loom fixing, but as the opinions of many, supplemented by his selection of what he believes to be the most suitable method . . . . . .

cam for the complete revolution, otherwise the shed will not be formed correctly or at the right time. The ball should follow the cam as nearly in the center as is possible. If it does not, the cam and ball will wear unevenly, thus shortening the life of both parts. A point I should like to make here is that the shedding motion requires oil. Some mills prefer a grease on the cams, but for goodness sakes oil the treadle ball studs and the treadle studs. When the treadle stud



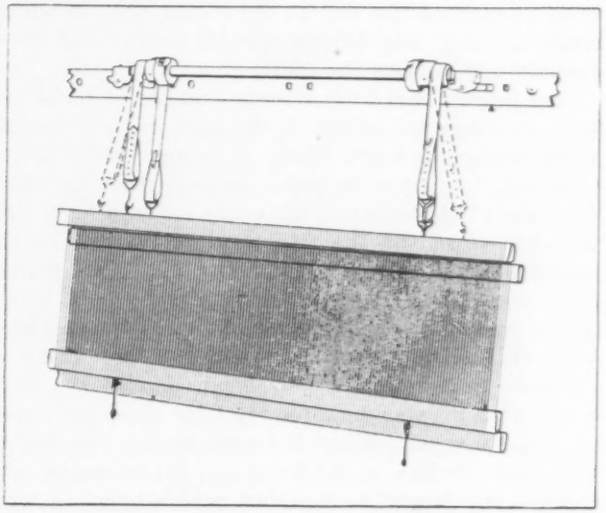
"Oil the treadle studs . . ."

becomes worn, the treadle has side lash equal to the amount it is worn, and the treadle ball weaves all over the surface of the cam, similarly to that of a drunk trying to walk a chalk line. Regular oilers seem to miss oiling the treadle studs more than any other place on the loom, and as a result the studs wear out quicker than would be the case if they were properly oiled. If you do not believe this, stop off a few of the looms in your weave room and check up on the side lash in the treadles.

The harness roll collars are of two sizes for a specific reason, to insure that the shed is formed and is of the same size for each pick. This reference is of course to a plain loom on two harness work. If the rolls were of the same size the shed would be of unequal size every other pick. This is due to the back harness being farther away from the fell of the cloth, thus requiring a greater or higher lift. The harness cams are of two sizes for the same reason. The back harness has to be lifted higher and depressed lower so that the set of threads that are drawn through the back harness will form a shed which will lie in the same plane as the threads that are drawn through the front harness.

The back harness is connected to the larger roll and to the larger cam. Be sure that the lay does not strike the front harness when the loom is on back center. To avoid this the harness roll shaft stands may have to be moved in toward the arch of the loom. Should the stands be moved check and see if the harness are working vertically. The treadles have notches in them by which the harness can be lined up so they will work in a vertical line and not at an angle. The harness straps should also pull straight up and down and not at an angle. The harness screws in both front and back harness should be inserted in a designated place on each harness. Thus if all harness have the screws in a certain place the harness roll collars should not have to be moved on the shaft in order to have the harness straps work in a vertical line when changing warps and harness. Should the straps pull at an angle the harness may not be lined end to end; the strapping will also wear out much quicker.

Another seemingly universal evil in connection with the harness is that they are seldom divided properly. Walk through any mill and notice how many harness straps are lapping on the rolls. The harness will not work in a vertical line while this condition exists. Before ever trying to set the harness they should be divided properly. This requires only a short time and will save time and labor in the long run.



Dotted lines show improper setting of straps

Steel harness are usually run tighter than twine harness. This is because they are heavier. It has been my experience that better results are obtained with a closer setting on steel harness. By a closer setting I mean the harness are set closer to the race board.

Results of Poorly Set Harness

A few results of incorrectly set harness are as follows: They may cause the shuttle to be thrown out of the loom. A high harness eye on twine harness can cause kinky filling. A poor face or cover on the cloth may be the result of poorly set harness. The harness may be holding the nose of the shuttle at an angle as it enters the box, causing undue wear or cutting of the shuttle on the bottom. Incorrect setting may result in overshots, harness skips and may sometime cause reedy cloth.

And, lastly, what I think is the greatest evil—poorly set harness retard the shuttle and kill the power on the loom, causing it to slam off or tip off. Harness setting is another one of the little things about loom fixing that has been overlooked and sorely needs attention in some weave rooms.

Beating-Up Motions

The beating-up motion is a reciprocating motion imparted to the lay, by means of pitman arms, from the crankshaft. This is the operation by which the

filling, after having been inserted in the shed by the shuttle, is beaten into the cloth. The beating-up motion is an important factor in weaving a cloth that is smooth and even.

The shedding cams should be set in relation to the beating-up motion, according to the style, weight and construction of the goods and according to the face desired on the cloth after being woven. For instance, on fabrics having a fine or high count filling and a small number of picks per inch, the shedding motion should be timed late—that is, with the harness level when the reed is from ½- to 1-inch from the fell of the cloth. The warp yarn will have crossed the filling at this point and the filling will only have to be moved forward a fraction of an inch before reaching the fell of the cloth. All of which tends to keep the filling spaced evenly and in a straight line across the cloth.

On fabrics that have a large number of picks per inch, or when the count of the yarn is very low as when making a heavy cloth, it is more difficult to separate the yarns in order to form a clear shed. Therefore it is better to have the harness level and the shed closed on the filling when the crankshaft is on bottom center, the reed being 2¼ to 2½ inches from the fell of the cloth with the harness level; this is known as early timing of the shedding cams. With this setting the warp yarn has more time to separate in forming a new shed, due to the reed traveling a greater distance after the shed has started being formed. When the reed strikes the fell of the cloth it has a tendency to shake apart any threads that might be hanging, which helps to form a clearer shed.

Other Points to Be Noticed

One or two points that it might be well to check over in connection with the beating-up motion is as follows: Notice the condition of the eccentric pins and pitman arms, and be sure that neither of them are worn. Be positive that the lay is lined correctly. By that I mean that the lay is coming forward the same distance on both ends. Of course the swords, the recess in the lay for the reed and the reed cap must be correct for the reed to be lined, but the reference I am making here is especially in connection with the eccentric pins. The lay is usually lined by using the inside edge of the breast beam to gauge the distance that the lay and reed comes forward, though other fixers bring the crankshaft to front center and use the distance between the daggers and the loom side as the gauge. My objection to this is that the protector rods or protector rod bearings may not be worn the same amount on both ends of the loom, so they would not give the accurate position of the lay. The eccentric pins are all marked in a certain place. Thus when one pin is turned to bring one end of the lay forward the other pin should be turned the same distance. By noticing the marks on the pins before and after turning them, it is a simple matter to bring either end of the lay the desired distance forward in order to line it correctly.

For example, should the lay on the right hand, or battery, end of the loom be brought forward by use of the eccentric pin in order to center the bobbin in the shuttle, when a change of bobbins is effected, then the lay should be brought forward an equal amount on the lever end to keep the lay in line.

The rocker shaft collars and swords should be tight to prevent side-lash in the lay. Be sure that the swords are not forced out of a normal position before they are tightened to the rocker shaft as this will cause the lay to bow, up or down as the case may be, in the center of the lay. Lastly, be sure that the pitman arms and eccentric pins are well oiled and tight at all times. Leather should be placed in between the cuff and the crankshaft and between the eccentric pin and the cuff to prevent wear of these parts.

Face or Cover on Cloth

A very successful general manager of a large mill once used the following illustration of a point while talking with me. It seems this manager had a boy who had aspirations of a better job in his weave room. One day the manager was walking through the room and passed this boy, at the same time he noticed an empty quill on the floor. Calling the boy he asked him, in all seriousness, if he would pick up a nickel if he saw one lying on the floor. The boy, of course, answered that he would. Whereupon the manager leaning over to pick up the quill remarked that every quill cost the company at least a nickel and the less the company had to pay out for supplies the greater the profit they made and the higher the salary enjoyed by all concerned.

This doesn't exactly hit the nail on the head, as the saying is, on the point I'm trying to get across, but it comes so very close I thought I could use it satisfactorily, besides I had to start somewhere. Some superintendents and overseers have the same blindness as the boy that overlooked that quill, only it affects the company to a much greater degree.

The Advantages of Good Face or Cover

This blindness is on a little matter known as face or cover on cloth. Literally speaking, it requires little more effort on the part of the overseer to attend to this detail than it did for the boy to pick up the quill. Inasmuch as the parts of the loom that govern or control this face or cover have to be set anyway, they could just as easily be set to produce the best results as otherwise.

Have you ever known of two different mills on exactly the same standard style of goods, construction, weights and counts being practically the same, where one mill sold its product with apparent ease while the other mill had to shorten its hours, or employ other equally drastic measures, and still had a warehouse full of cloth? Not only does a cloth with face or cover sell easier, but at times commands a better price. The average grammar school child can enumerate the results of having a warehouse stocked with unsold goods and more piling up all the time, so I think it might be well to look into this question of face or cover on cloth in hopes that someone might benefit by it, especially as it cost practically nothing to make cloth this way.

There are three ways, that I know of, by which face can be put on cloth. First by having the warp line at an angle, second, timing of the harness cams, and third, the amount of twist in the filling. Looking a little further into each of these ways we find that by having the warp line at an angle we mean the line of the warp from the whip roll to the breast beam.

The accompanying sketch (Fig. 1) shows the warp line to be a straight line from the whip roll to the breast beam when the harness are level, and it is readily seen that both the top and bottom shed have, theoretically, the same amount of tension on them at all times. This means that the same amount of yarn,

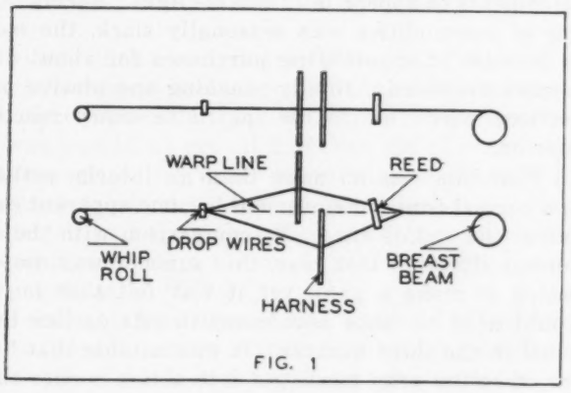


FIG. 1

warp and filling, will be distributed on the top and bottom, face and back, of the goods. I might say here the matter of face on goods could be taken care of easily, if a reed fine enough to reed the warp threads one per dent could be used. But as goods are reeded two per dent usually, the warp threads have a tendency to work in pairs making what is commonly known as reed marks or reedy cloth, which forces us to seek means to overcome this condition.

In this second illustration I am trying to show how the warp line is affected by raising the whip roll and breast beam.

The reader will notice in this case that the warp line has been changed. The distance of the top shed from the warp line is smaller, and the distance of the bottom shed from this line is greater. This means that the top shed will be slack and the bottom shed will be tight, comparatively speaking, and the threads of the top shed being loose will spread out and fill in between the tighter threads of the bottom shed. Also, the filling being loose will do most of the bending when the warp and filling interlace, thus being forced to the face of the cloth. This is where the effect of the loose twisted filling enters. The filling having less twist per inch will more easily bend around the warp yarn when the interlacing takes place and is therefore forced to the face of the cloth, giving a smooth soft finish to the cloth. There's a limit to which soft twisted filling can be used of course, because of the breakage that will occur in the spinning room and in the weaving, due to the lower twist per inch weakening the filling.

There can be no set or specified twist per inch given as being the best to use to get this face on the cloth, as the twist depends on too many factors, such as the staple of the cotton, the count of the yarn, the speed of the machines, the humidity of the dif-

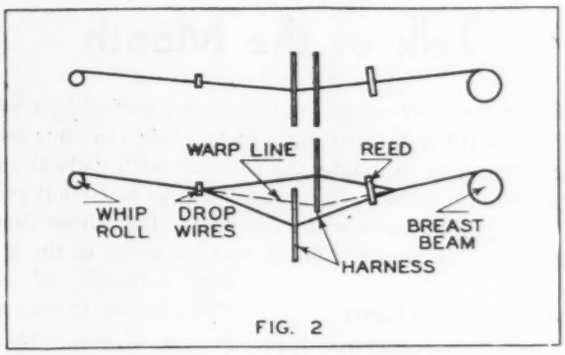


FIG. 2

ferent rooms, whether or not the filling is conditioned before being used, etc. It's a matter of trial and error in each plant to determine the twist that will give the best results in good running filling and still put a face on the cloth.

Some plants may have looms with wooden breast beams, in which case if it is desired to raise the warp line at this point, it can be done by placing a strip of wood across the top of the breast beam. This will give the same results as raising the sandroll on other types of looms. To insure making uniform goods on all looms that are running the same style, the whip rolls on these looms should all be set alike. The best stop motion stands should also be found and all stands set alike. As you probably already know, moving the stop motion forward or backward will influence the size of the shed as is readily seen by referring to either of the foregoing sketches.

After trying out different settings of the whip roll and deciding on the one we wanted to use, we made a gauge out of a piece of wood and had all the whip rolls on our looms that ran the same style set up alike. Thus all cloth made throughout the room was more uniform than was true before these settings were made. There's a limit to which the whip roll or breast beam can be raised; should too much tension be placed on the warp yarn there would be trouble with the ends breaking out.

The shedding cams should be timed so that the harness will have opened and crossed the loose pick before the loom beats up. The warp threads have the most tension on them when the shed is open, thus the filling will more easily bend the tight warp threads and be forced to the face of the cloth.

The timing of the shedding cams is dependent on the kind of cloth being made, etc., early or medium timing usually being used for standard print cloth and sheeting. The settings of the shedding cams have been given attention earlier in this article so there is no need to cover them again.

(This concludes the second installment of the series on loomfixing methods. The third part will appear in an early issue and will cover boxing the shuttle, the protector motion, button-hole selvage, and faulty cloth. We hope you are saving your copies of the paper for references.—The Editors.)

CURRENT TEXTILE TOPICS ....

Talk of the Month

INDUSTRY came into the second half of this year with a definite turn of the tide that has been threatening to inundate the country with radical control. Public opinion, that giant slow to rouse but powerful to check sinister forces when they show themselves getting too prominent, was apparent in the sudden collapse of the CIO strikes. It was apparent in the evident, if reluctant, withdrawal of support for the CIO by the Administration.

Public opinion turns politico-economic tide

This labor side is only one phase of the change. In legislative circles, the force of public opinion was turned on the Administration itself. Your average citizen, and his representative, in 1932 and again in 1936 by vote committed himself to a New Deal. But he did not abdicate his sovereign rights, as vested in the Constitution, and he did not figure to subject himself to political control of all his activities.

Thus even those whom the defeated conservatives had considered radicals turned against such a proposal as the President's own pet Court plan. And, as in the case of this plan, the proposal of wage-and-hour legislation developed widespread public antagonism as giving powers of administration into the hands of an individual or a small group which would have dangerous possibilities of evil and would serve no national good.

It is by no mere coincidence that the cotton industry suddenly picked up new selling activity around the first of July, after three months of lethargic trading. The political-economic changes were part of the force stimulating buyers. Another was the sound operating policy of the mills through the period of inactive trading. Still a third was the evidence that mid-June brought an end to the general reaction from the boomlet in commodities reaching its peak in March. A fourth was the appearance of a new situation in agriculture, promising support for national forward movement the coming year.

While the New Deal in some of its experimental characteristics went to untenable extremes, there is no discounting the salutary effect upon the cotton industry of sound features in the NRA. The recent lull of many weeks served the very valuable purpose of demonstrating the value of well regulated, voluntary control. Incidentally it is likewise, to many minds, a demonstration that, whatever legislation for control of hours and wages might be necessary, private administration is capable and adequate under the new order.

Manufacturers of gray goods allowed prices to drop substantially through the second quarter of the year, but it was an unusually orderly decline, by contrast with the past. There were reports of some lines falling to cost of production or even lower, yet they were at a minimum instead of the rule. Temporary disturbance to confidence was created by the wave of strikes which was the most threatening for a decade. The increase of cotton acreage and favorable crop conditions also was a temporarily bearish element in the goods market.

General economic conditions turned promising at the start of July, however, removal of the incubus of CIO domination allowing normal underlying developments to appear in favorable light. Spring buying of commodities was seasonally slack, the more so because of unremitting purchases for about nine months previously, finally reaching speculative proportions which led to the inevitable sharp reaction later on.

That this was no more than an interim setback to a normal forward movement became apparent even before the end of June. By comparison with the abnormal situation last year, this summer was not expected to make a gain, yet it was felt that buyers would need to make new commitments earlier than usual in the third quarter. It was notable that buyers of cotton gray goods got into action sooner than had been anticipated, especially in view of the uncertainty over the market for the raw material.

Behind the healthy situation in the cotton industry has been a sound position among retail distributors of finished merchandise. It was reported the first of July that the sharp upturn in retail inventories around the first of the year was halted, at least temporarily, after April. Stocks were allowed normally to decrease the latter part of the spring. On the other hand, at the start of the summer they were still well below the levels common prior to the depression.

Collapse of the strike movement quickly changed a serious outlook in consumer trade over important industrial areas and once again left it clear that manufacturers faced prospects of good gains in income for 1937 over 1936 in virtually all groups of the population. Industrial payrolls were estimated to be running 15 to 30 per cent above those a year ago. As usual, those in the salaried class were not making proportionate gains, yet even here an improving tendency was seen.

To many observers the most outstanding favorable development for all business was the indication that farmers would reap high prices for a larger production of crops. With high prices prevailing at the start of the harvest of the winter wheat crop, and world demand expected to absorb American surplus in sight, the great farm population bids fair to be the main cog in the economic machine the coming year. General income, already increased, is the more assured with a favorable position for agricultural producers whose position as a consumer ramifies through all branches of industry and distribution.

New England Mill Situation

NEW ENGLAND, especially the Berkshire Fine Spinning Associates, can take much credit for a sound summer situation in the cotton industry. It was this district that inaugurated a curtailment policy consistent with the decline of orders in the spring and thereby brought a stabilizing influence into a weakening market for goods generally.

Recovery of broad buying in gray goods became most noticeable in the large turnover of print cloths starting around the first of July. Nevertheless, in line with the leadership in curtailment, it was noted a week earlier that business in fine lawns was more than seasonally active. Furthermore, the Berkshire company had renewed operations after resorting to the drastic measure of closing several mills for weeks.

While such changes were going on, the policy of curtailment proceeded among other manufacturers of the district over the Fourth of July. This irregularity was logical, as not all mills ran out of orders simultaneously. The whole move was an example for the cotton industry at large, meantime, for it demonstrated to buyers that they must purchase goods ahead if they did not want to run the danger of belated deliveries.

Leading mills of the section have indicated clearly that they intend to refrain from making goods for stock. Such production is a lever for buyers for control of prices in their own favor. This is an obstacle to profits for mills in a new era of high wages and short hours for workers. It has always been a force for seasonal periods of selling below cost and manufacturers at last have adopted a policy to eliminate such conditions.

Buyers of fine goods in the primary market appear to have taken cognizance of the new situation. The last of June brought signs of a quickened interest among converters in gray cloths and right on the heels of the first broad turnover in print cloths came a heavy sale of fine goods. There was also a demand for prompt delivery of some goods that had been held at mills subject to call.

Good reports of leading mills in this area are a feature of the past month. The Naumkeag Steam Cotton Company of Salem, Mass., reported an increase from $1 to $2 a share in dividends, albeit this was a reflection of substantial profits earlier in the fiscal year since conditions at the time were rather unsatisfactory and the concern planned its customary shutdown for the first two weeks of August.

Pepperell Manufacturing Company of Boston paid $5 a share on June 28. This made a total of $16 for the fiscal year ended June 30. This organization has had a remarkable record, paying dividends every year throughout its history. It has had a life of steady progress, in management as well as results. Its achievement in paying dividends through good times and bad is a tribute to persistent adoption of new methods both in production and in marketing thereof.

Among the mill developments of note is the approval by stockholders of the Nashua Manufacturing Company plan of recapitalization. New first preferred stock carrying rights to special preferential dividends was offered in exchange for old holdings. A dividend of $5.50 was to be declared as soon as enough stock had been exchanged.

General Motors Corporation was reported recently as entering the New England textile field, by taking over a part of the Merrimack Manufacturing Company plant, in Lowell, Mass., for production of automobile seat covers. The new plant is headed by E. Clayton and makes corduroy seat covers.

Hope Webbing Company, of Pawtucket, R. I., after a strike which closed the plant and threatened its liquidation, finally returned to production. An election held by the National Labor Relations Board found the Independent Narrow Fabric Workers' Union victor over the CIO and the former was recognized as the sole bargaining agency. The TWOC had instituted the strike for new conditions including a closed shop. The reopening was provisional, with permanent operations contingent upon a meeting of stockholders in regard to the previous order of directors to liquidate or to move the plant.

Pickard Heads Alabama Cotton Mill Men

Wayland B. Pickard, general manager of the Nashua Manufacturing Company, Cordova (Ala.) plant, was elected president of the Alabama Cotton Manufacturers' Association, at a reorganization meeting held at the Mountain Brook Country Club, Birmingham, Ala., on July 13. Mr. Pickard succeeds Scott Roberts, Anniston, Ala., who has held the office for many years. Mr. Roberts was elected chairman of the board of directors. Other officers chosen were R. W. Jennings, Lanett, vice-president; and Neal P. Sterne, Anniston, general counsel. Members of the board of directors include Fred O. Tyler, Anniston; George S. Elliott, Huntsville; Paul A. Redmond, Birmingham; Ben Russell, Jr., Alexander City; L. E. Lane, Bemiston; B. G. Stumberg, Tallassee; G. Arthur Cook, Montgomery; B. B. Comer, Birmingham; and R. Paul Clark, Gadsden. In the regular executive session, market and labor conditions were discussed.

Following this re-organization meeting, the Alabama association voted to join with the Cotton Manufacturers' Association of Georgia in the operation of a joint traffic department to handle freight rate and other traffic matters for the mills of the two states. The joint department will be under the general supervision of a joint traffic department composed of five mill executives from each of the two states. It will be in direct charge of C. T. Kilgore, who for a number of years has been traffic manager of the Georgia association, which for a long time has operated a traffic department which will now be merged into the joint department for Alabama and Georgia.

The bard Homer once said, "Many years from now a great country will compose a great Constitution—and then ignore it."

The size of the man can be measured by the size of the thing that makes him mad.

"THE SITUATION"—as Seen Across an Executive's Desk

July 17, 1937

IN JULY and August the state of public opinion is at its lowest ebb. The mind of the public is so taken up with either the weather and its debilitating influence or vacations and their exhausting results that concentrated consideration can hardly be given over to one subject. No matter the topic of business or national affairs which is brought up, one's listeners are more than likely to wave one away with a tired gesture and then go right ahead sipping a Coca-Cola or a Tom Collins or wishing for both. Despite all of this, we approach the state of the textile industry at this time in a mood of optimism which cannot be stifled by the heat wave, for things are definitely better. There are many reasons for this pick-up and the industry is to be congratulated that certain groups and leaders took over the controls within the past few weeks and made happy landings for us.

Prices and Business Improved

The price structure reached its low in the seasonal lull early in July but the elevator did not linger long in the bargain basement; it took its passengers right back up to the Main Floor and above. While the volume of sales of gray goods reached a minimum during June with weeks going by and interest being decidedly lacking, regardless of price, things picked up slightly toward the tail end of the month and during the latter part of July there was a marked stiffening of prices and demand on all types of grays, including fine combed lawns. When the sale of close to 25 million yards of print cloths was sufficient to put the market up ⅜-cent per yard within a space of less than a week we knew that the market was really much steadier than in some time. The price stabilization was noticed throughout all lines of production; in carded and combed yarns as well as print cloths, and it was with relief that the producer realized that bargain day was over. One student of market conditions termed the above mentioned sale of 25,000,000 yards and its resultant price advance as "strategy" pure and simple, for he pointed out that while in the market's weakest mood when it was not possible to sell any quantity of goods at the lowest prices, it was, at the same time, not possible to buy goods at those same levels. With only a few sellers willing to participate in an impetus from the accepted low it naturally did not take much to push the most wanted numbers up. Whatever the reason, the result remains that prices are on the up-trend, and that there is considerable interest just now from converting and retail centers. It is a great boost to our market-morale to learn that after all the situation has not gone quite to hell.

Customers' inventory is still a decided factor in the market, for they still have quantities of goods on hand, but many other elements enter into the situation and it seems almost as if the market had been dragged up by its own boot-straps. A great majority of the mills took advantage of a tinge of over-production in the market to give their operatives a week's full vacation during the Fourth of July period. While the workers relaxed and fished, finished goods started to move a little more freely and the net result was a general pick-up in shipping instructions and a new low in mill inventory. While astute market-observers had watched the glorious profit-era fade out during the closing months of 1937's first semi-annual period, they believe now that such an era is more than likely to come back before the last half of the year is over. Manufacturing margins have dropped, it is true, and costs are steadily rising, but watchful executives are not going to take too much business without considering the cost of manufacturing. Many have learned their lesson, and those who have not deserve to be scorched.

CIO Developments

One of the most interesting developments during the past weeks is that of the status of the CIO. With public sentiment in general turning against its tactics, as practiced in the steel situation, and with labor's allies in the Administration pronouncing that sit-downs were illegal and wishing for "a plague on both your houses" it was clearly seen that CIO, and Mr. Lewis, had lost prestige and force. Which brings us back to our own sum-up of the situation some months ago when we said that the whole thing was a case of "strike-fright" on the part of the public, and that we had confused Mr. Lewis' personality with our childhood illusions of the ogre. As soon as one industrial leader stood up and dared say Boo! to him the public at large began to quiet its hysteria and see things as they are, and not as Mr. Lewis wanted them to be seen. Mr. Lewis, we fear, had confused authority with authoritarianism which, defined, is authority gone mad, with as much difference between the one and the other as between law and legalism. Too, his CIO had confused authority with liberty in their demands upon the industrial organizations. They had not stopped to realize that authority, if it became absolute would mean the death of liberty; that if liberty became absolute it would mean the death of order. Without order we can reach no ultimate goal neither in industrial nor labor circles and demands.

We all know that the Philadelphia *Record* is intensely friendly to the cause of organized labor. It is so completely pro-labor that we can call it a "labor organ." Yet, the *Record* comes out with its most scorching editorial in years and advocates the theory that labor should insist upon legislation that would:

1—Outlaw strikes in which there is no issue between employer and employe—which would mean outlawing jurisdictional strikes, sympathetic strikes and general strikes;

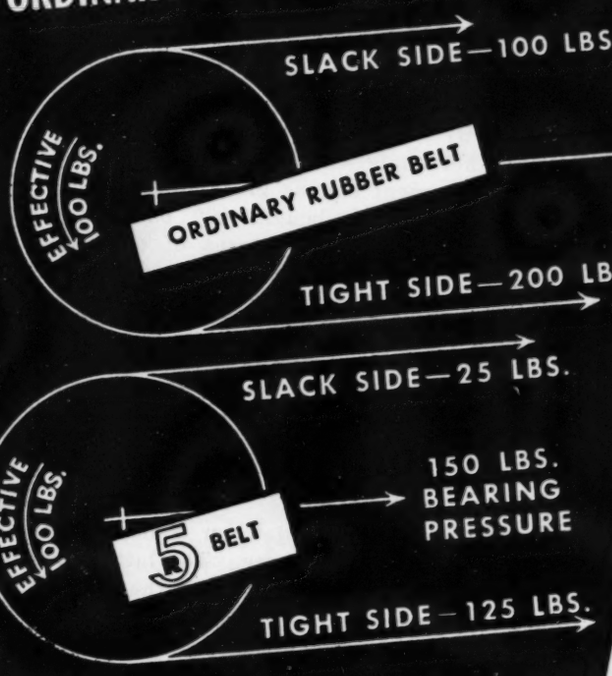
2—Outlaw strikes against any employer with whom a union has a contract, unless violation of that contract is charged;

3—Provide for real democracy in unions by requirement that no legal strike may be called without a referendum of the membership.

PLANT SUPERINTENDENTS, ENGINEERS, MASTER MECHANICS, MILLWRIGHTS—

Note—

COMPARISON OF TENSIONS AND BEARING PRESSURE BETWEEN ORDINARY RUBBER BELTING AND THE NEW GOODYEAR 5R



Q.E.D.—5-R delivers the same effective tension with a reduction in total belt tension and bearing pressure from 25% to 50% depending upon its arc of contact with driving pulley

5-R is made in roll lots in all sizes and widths, square-edged. Easily applied with any standard fastener. Also made endless on order.

THE new Goodyear 5-R Belt will pull your heaviest drives at 25% to 50% lower tension because it has a higher co-efficient of friction—a pulley-grip unsurpassed in any other type of rubber belt! This results from a new Goodyear *non-rosinous* compound so tenacious that it will not chatter, crumble, ball up or slip.

This enduring grip permits a slack-tension operation that insures longer belt and bearing life—that reduces fastener troubles, lubrication problems, and frictional losses—that cuts power costs. This has been proved by over two years' test service on hundreds of different industrial applications. The G.T.M.—Goodyear Technical Man—will be glad to explain its special advantages as applied to any drive in your plant. To bring him, write Goodyear, Akron, Ohio, or Los Angeles, California—or the nearest Goodyear Mechanical Rubber Goods Distributor.

BELTS
MOLDED GOODS
HOSE
PACKING
Made by the makers of Goodyear Tires

THE GREATEST NAME IN RUBBER
GOODYEAR

I have never seen anyone yet who would listen to friendly advice if it was free. Folks resent such friendship, but we hope that labor will at least read the *Record's* suggestions before making a fire with the newspaper.

The Revised Labor-and-Hours Bill

The Labor-and-Hours Bill in a revised condition was dragged back into Committee early in July and at this writing is still there, waiting for the Court Bill filibuster to end. While we feel fairly sure that no labor-hours action will be passed at this session of Congress, for our Capitol Hill folks are too heat-worn to go into it thoroughly, we also feel that in its state of revision it is much better for us all than at any previous time. It is certainly much more flexible and is generally in line with recommendations of textile industry representatives.

The revised bill, altered along fundamental lines, bears little resemblance to the measure originally placed before Congress by the administration. It takes away many of the arbitrary powers proposed in former measures for the fair labor standards board and sharply defines the limits within which the Federal body may function in regulating labor conditions in industry.

The new bill will apply to all interstate industry regardless of the size of the business establishment, with retailing of a local nature being specifically excluded from the bill's terms. The controversial Section 5 of the measure has been so changed that it now provides only that nothing the board shall do shall impair the right of labor organizations, through collective bargaining, to obtain better working conditions than those provided by board orders. Section 4 has also undergone a change, and is now so written that the board may fix hours down to a limit of 40 per week and wages up to a limit of 40 cents per hour. In other words, here is our long looked for "ceiling" for wages and "floor" for hours, with full provision for establishment of geographical, sectional and industrial wage differentials at the discretion of the board.

The other marked adjustment of the bill is that in response to demands from both industry and labor the bill provides that the board shall co-operate with the Tariff Commission in preventing excessive competition from low-cost nations. It actually looks as if we are getting somewhere with this business, and that in the long run we will have legislation which will help us good 'uns and throttle the chiselers.

Cotton Crop Prospects

With the first government acreage report already out our minds turn to the raw cotton prospect for this next fall season. On the prospects and price of this crop our entire business hinges. We find that the acreage is increased, naturally, for it is an innate quality of the farmer's blood to plant as much acreage as the law allows, and this year with the barriers removed he has planted every inch that his bank loans would justify. However, the crop will run more to shorter lengths than ever before, for we find that in the fertile Delta sections where long staple has always held sway that at least one-third of the land has been planted in 1-1/8-inch and 1-1/16-inch type seed. Long staples are at a premium now, and there is no government pool to relieve the shortage this year, so those mills which spin the longer staples will have to buy early for future coverage, and will have to pay through the nose for what they buy. Last year the Delta produced around 700,000 bales of long staples. This year they hope to produce that much but the prospect for a bumper crop such as was seen in 1936 is not so bright at this time, and the possibility is that the actual baleage on long staples will approach last year's crop but not touch it. From fairly accurate surveys we find that the actual American consumption of long staples is around the million mark in years such as 1936 when records over a period of years for cotton consumption were broken. From this we face certain reality of an actual shortage in the longer staples.

American Mills Using Foreign Cotton

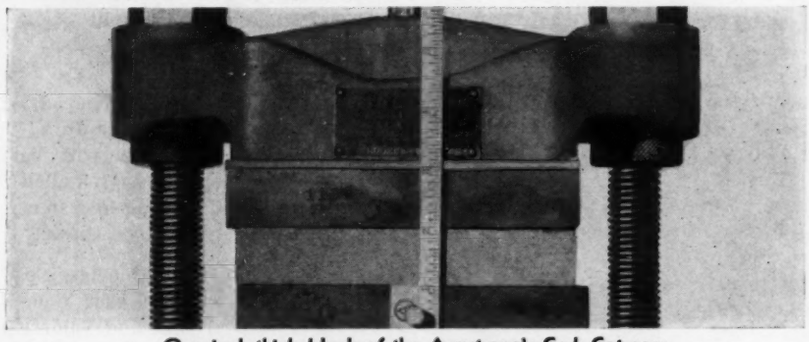
Another angle which has injected itself into the cotton movement can be given in two recent examples: Pacific Mills bought 600 bales of Brazilian cotton, evidently for purposes of experimentation, and if the cotton proves satisfactory for their purpose, and the price cheaper than domestic cotton, it is evident that a new market is opened for South American growths; Union of Soviet Socialist Republic (Russia) shipped their first cotton to the United States of America. This shipment consisted of several thousand bales of low-grades, priced very low, and will replace American low grades and better grade of spinnable waste. The cotton was sold for around 8 cents a pound when domestic cotton was bringing a bit higher price. The latter incident, to our mind, is of more import than the Brazilian shipment, for Russia is in agreement with the Rust Brothers for the manufacture and use of the mechanical picker, which works excellently on low grades such as Russia is producing at this time.

We have always held that the only way for America to hold its own in the raw cotton markets of the world was to produce more cotton at less money. Our policy of the past few years has made our prices prohibitive for foreign mills and they have turned to other countries for their supply. Now we are faced with the possibility that our own markets will be opened to foreign growths of lower grades. Will this call for a tariff such as is on Egyptians? It is still too problematical to hazard a solution but the problem calls for clear thinking.

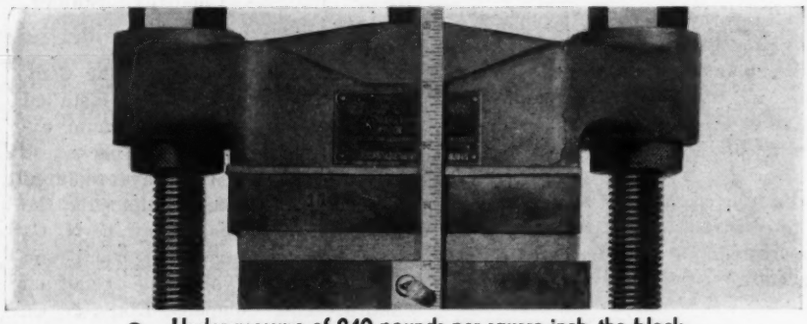
And, speaking of cotton—we want to warn you fellows about the new type tag that the government is putting into bales of cotton from certain gins for experimental purposes. The tag is non-removable until the bale is in the opening room at the mill; it is a metal wire which is hard to detect and which runs completely through the bale. We know one guy who was unfortunate enough to let one of these slip through and what that tag did to his picker was aplenty. It cost him a brand new picker, that's all.

Why the COMPRESSIBILITY *of* CORK *is vital in spinning all types of yarns!*

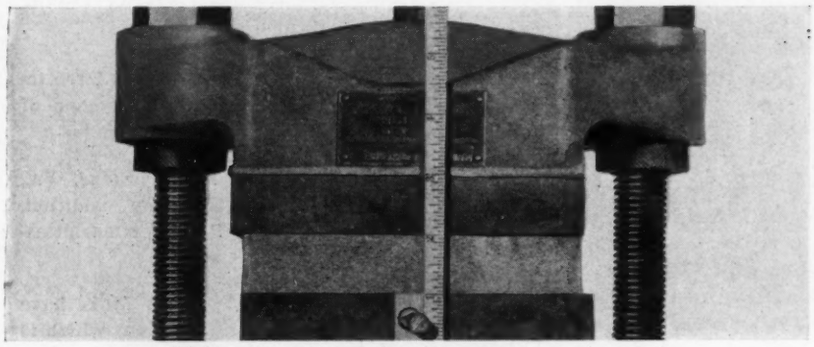
HERE'S PROOF OF CORK'S "COMEBACK"



1. One-inch-thick block of the Armstrong's Cork Cot composition before pressure was applied in a compression test.



2. Under pressure of 240 pounds per square inch, the block of cork composition is reduced to one-half inch thickness.



3. Within a few minutes after the pressure was released, the block returned to practically its original thickness.

NO matter how long cork remains under pressure, it will not spread or flow laterally or take a permanent "set." This unique characteristic is due to the natural cell structure of the material itself.

Under a microscope cork is shown to consist of millions of tiny cells containing still air. When pressure is applied, only the air in the cells is compressed—the cell walls remain unaffected. When the pressure is released, cork tends to return to its original proportions, just as lively and as springy as before.

To mill men, this exceptional property of cork offers several definite advantages. Its greater cushion provides a higher margin of spinning safety. Its lack of lateral flow and its permanent resilience give cork a truer drafting surface. Top roll laps, too, are less disastrous. For in many cases, cots deeply grooved by top roll laps, if allowed to stand awhile, will return to their original shape and may be put back into service without rebuffing.

This high compressibility is but one of cork's many valuable spinning features. In addition, this material offers a high coefficient of friction, durability, resilience, and resistance to liquid penetration. Combined with high compressibility, these properties assure a roll covering material that wears longer . . . spins stronger, more uniform yarn . . . requires fewer changes, and reduces roll covering costs as much as 50%!

For the complete story of cork as a roll covering material since its introduction by Armstrong more than twenty years ago, and for samples of the new Armstrong's *Extra Cushion* Seamless Cork Cots, write today to Armstrong Cork Products Co., Textile Division, 923 Arch Street, Lancaster, Penna.

FOR SPINNING AND CARDROOM ROLLS

ARMSTRONG'S EXTRA CUSHION SEAMLESS CORK COTS

ARMSTRONG HAS MADE CORK PRODUCTS SINCE 1860

WHAT THE SOUTHERN MILLS ARE DOING

COTTON MILL PRODUCTS COMPANY, Mill No. 3, Winona, Miss., has begun a repair and modernization program of the mill building. A new roof is being placed over the entire building and numerous repairs are being made throughout. The interior of the plant is being painted a light color.

Gaffney (S. C.) Manufacturing Company's stockholders have voted a recapitalization plan for the company in order to modernize the plant throughout.

Cedartown (Ga.) Cotton and Export Co., Inc., have begun production on full schedule.

Riverdale Mills, Enoree, S. C., have begun an addition to the present plant with Potter & Shackelford, Greenville, S. C., doing the work.

E. I. du Pont de Nemours & Company, Inc., will spend over 5 million dollars expanding the Ampthill plant of the company's rayon division which is located near Richmond, Va. The company is adding extensively to its water, steam, and electric systems.

Ragan (N. C.) Spinning Company is moving machinery into the recently built addition to the plant.

Flint Manufacturing Company, Gastonia, N. C., has purchased new machinery; among that installed is a new Allen-Bradley winder. A conveyor has also been installed.

Groves Thread Company, Inc., Gastonia, N. C., has installed 12 Whitin spinning frames and two new automatic breakers and feeding machines.

Bibb Manufacturing Company, Macon, Ga., has constructed a 3-story addition to the plant, 50x200 feet, which, with equipment, will cost about $100,000. Q. R. Nolan is the plant engineer.

City Cotton Mill Company, Newton, N. C., has built a two-story addition to its plant.

The Durham Cotton Manufacturing Company, East Durham, N. C., has completed a program of modernization which included the installation of automatic looms, the overhauling of other machinery, and various building improvements.

Tennessee Eastman Corporation, Kingsport, Tenn., is having a one-story addition built and work is going forward rapidly.

Ruby Cotton Mills, Inc., South Gastonia, N. C., has provided a modern playground for the operatives. There are sections for soft ball, tennis, etc.

Washington Manufacturing Company, Tennille, Ga., is building a one-story addition 56x100 feet.

Newberry (S. C.) Cotton Mills have begun a general renovation program in the village, which includes the addition of bathrooms to about 250 of the dwellings, and the painting of the interiors of all the homes.

Piedmont (S. C.) Manufacturing Company will construct a new filter plant costing over $50,000, replacing a similar wooden structure having only half the planned capacity of the new plant. J. E. Sirrine & Company, Greenville, S. C., textile engineers, is in charge of the work.

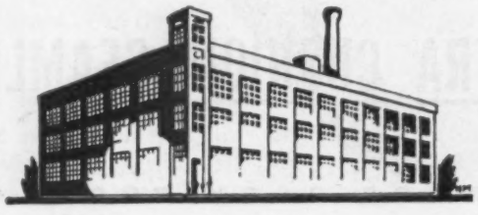
Lydia Cotton Mills, Clinton, S. C., plan to construct 50 new residences for the operatives; 10 of these are already being built.

Central Falls (N. C.) Manufacturing Company has begun installing additional looms in the new addition which has been finished.

Dunean Mills, Greenville, S. C., has contracted for the building of a cotton warehouse which will cost about $8,000.

The Board of Supervisors of Jackson County, Mississippi, has advertised for bids for the construction of a building with 60,000 feet of floor space to house the wool knitting plant of the Jackson County Mills.

Springs Cotton Mills, Gayle Plant, Chester, S. C., has completed an addition to the cloth room and sewing department which is 100 feet square. The second floor of the addition is to be used for the expansion of the sewing department and the first floor will house additional looms.



Sanford (N. C.) Cotton Mills will build a second story on the addition completed only in April, and will install 3,000 spindles which will bring the total up to 19,000.

Chatham Manufacturing Company, Elkin, N. C., will soon complete an addition to the plant, which will be 74x112 feet. 50 looms will be installed on the first floor and carding and spinning machinery will be placed above.

Amazon Cotton Mills, Thomasville, N. C.; Standard-Coosa-Thatcher Company, Chattanooga, Tenn.; and Valdese (N. C.) Manufacturing Company; have installed the latest type of piping system as furnished by the Gaston County Dyeing Machine Company, Stanley, North Carolina.

Highland Park Manufacturing Company, Charlotte, N. C., has installed the latest type complete vacuum extracting unit for beams and packages; the Bath (S. C.) Mills have replaced some of their dyeing equipment; the Neisler Mills, Kings Mountain, N. C., have revamped a two-kier 600 pound dyeing machine; and the Chatham Manufacturing Company, Elkin, N. C., has purchased a two-kier 600 pound dyeing unit for package and beam dyeing, and one extracting unit; all furnished by the Gaston County Dyeing Machine Company, Stanley, N. C.

Tolar, Hart & Holt Mills, Fayetteville, N. C., are installing a system of long draft spinning.

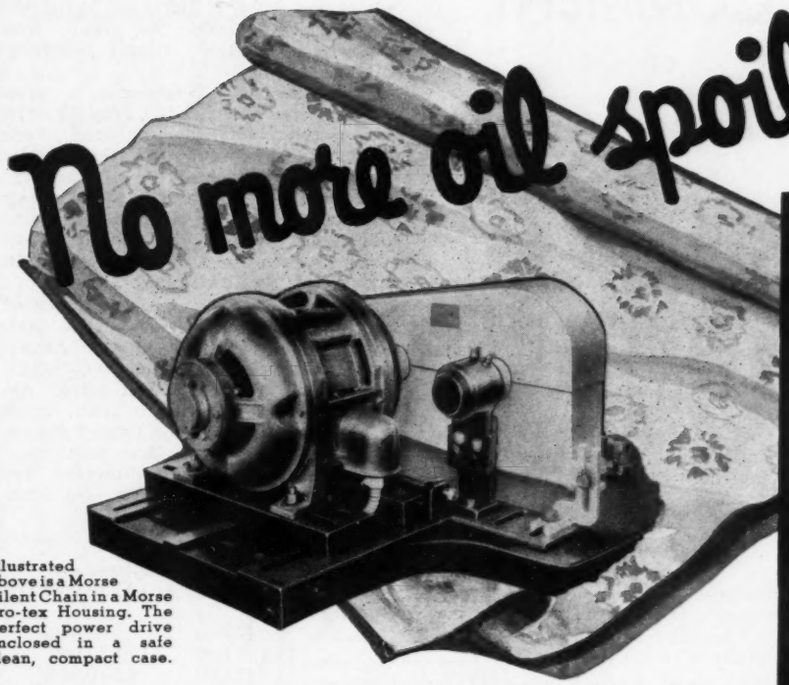
Virginia Rayon Mills, Orange, Va., are building a two-story addition, 70x120 feet, E. E. Burress, Charlottesville, Va., doing the work.

Weldon (N. C.) Cotton Mills have built an addition to the plant which is used for raw stock dyeing.

Bibb Manufacturing Company, Reynolds, Ga., has installed two new Whitin one-process pickers.

Anniston (Ala.) Yarn Mills, which have been sold to the Broadalbin (N. Y.) Knitting Company, are undergoing an extensive program of modernization, including the installation of long draft spinning, single-process picking, and increase in the number of cards.

No more oil spoiled product



Illustrated above is a Morse Silent Chain in a Morse Pro-tex Housing. The perfect power drive enclosed in a safe clean, compact case.

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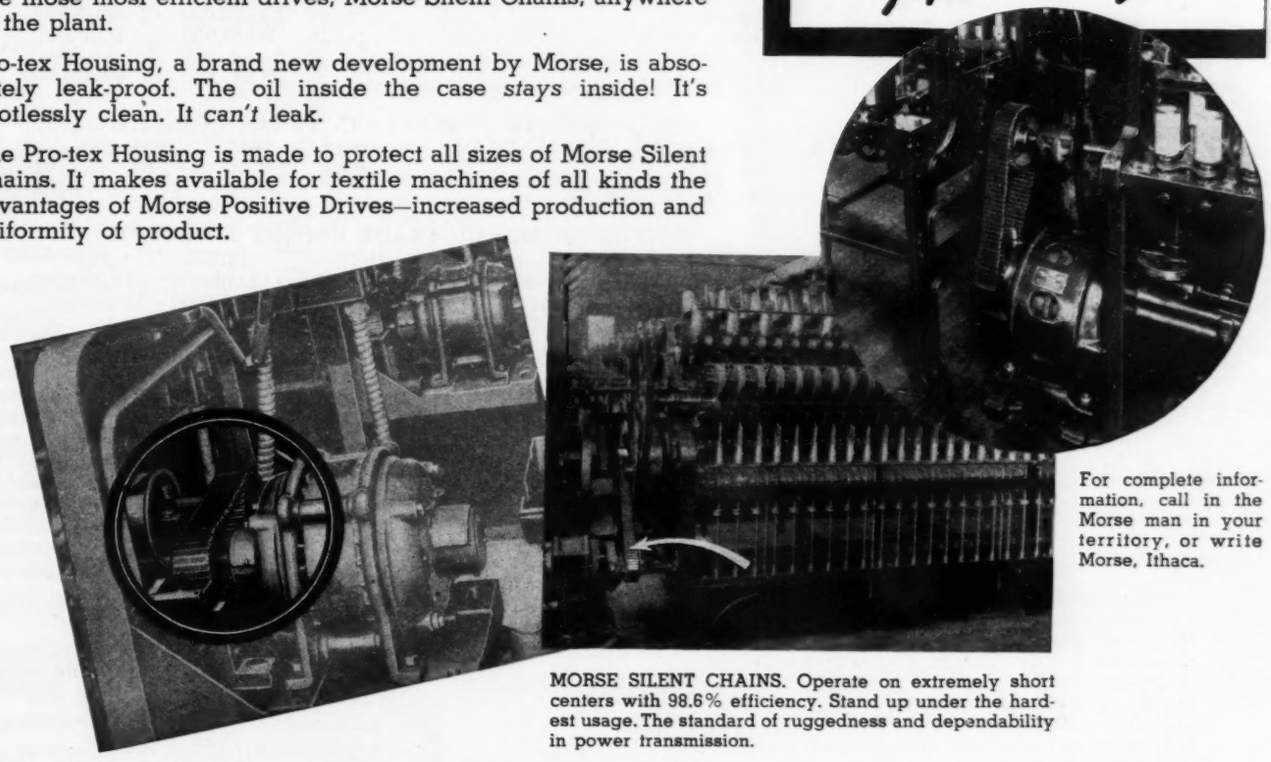
PRO-TEX *Housing*

The bane of a textile man's life—grease throwing, oily drives and treacherously leaky cases—is ended. Now textile plants can use those most efficient drives, Morse Silent Chains, anywhere in the plant.

Pro-tex Housing, a brand new development by Morse, is absolutely leak-proof. The oil inside the case *stays* inside! It's spotlessly clean. It *can't* leak.

The Pro-tex Housing is made to protect all sizes of Morse Silent Chains. It makes available for textile machines of all kinds the advantages of Morse Positive Drives—increased production and uniformity of product.



For complete information, call in the Morse man in your territory, or write Morse, Ithaca.

MORSE SILENT CHAINS. Operate on extremely short centers with 98.6% efficiency. Stand up under the hardest usage. The standard of ruggedness and dependability in power transmission.

SILENT CHAINS ROLLER CHAINS FLEXIBLE COUPLINGS KELPO CLUTCHES

MORSE *positive* DRIVES

MORSE CHAIN COMPANY ITHACA N. Y. DIVISION BORG-WARNER CORP.

COMMENT on the Cotton Market

New Orleans, July 14, 1937.

THE DOWNWARD TREND of the cotton market was checked during the past month. Liquidation having subsided, values displayed more stability, and, compared with one month ago, are moderately higher. Weather and crop conditions improved, there was no improvement of consequence in the demand for raw cotton in the South, but of late there was some revival in the inquiry for cotton goods, with sales reported in excess of mill production. Domestic labor troubles and foreign political developments were disquieting. While many strikes have been settled, the foreign political situation, especially in the Far East, appears to be threatening.

Sustaining features were: light offerings of contracts, some trade buying, short covering, a somewhat smaller than generally expected government acreage report, prospects of a much smaller world's carry-over of American cotton at the close of this season, and, perhaps, not much change from last year in the carry-over of foreign growths, the record large foreign crop notwithstanding. Another sustaining feature was the trade had probably come to the conclusion that weather and crop accounts having been unusually good during the early growing period, it was possible, if not probable for climatic conditions to change to less favorable in the future, or during the critical months of July and August. Thus far this month, however, weather conditions have been generally favorable. But there is no telling what the future has in store, especially with precipitation in Texas, November to June, both inclusive, totaling less than normal. However, with average weather conditions, if realized during the remainder of the growing period and during the maturing season, there is the probability of a good crop since the acreage is reported 10.4 per cent larger than last year's planted area, because of the use of more fertilizer and farm implements, and on account of labor being ample. Nevertheless, future developments on the part of the elements have to be reckoned with, as they are likely to have their usual important influence on the market, which, at the moment, because of the apparent need of a larger American crop, is becoming increasingly sensitive to climatic developments in the interior.

Record Breaking Cotton Consumption

The Census Bureau, Washington, reported that the domestic cotton industry had established an all-time consumption record although the season has a month to run. In the 11 months, August through June, the Bureau said, 7,361,737 bales of cotton had been consumed by domestic mills. The previous all-time "peak" was 7,189,585 bales for the 12 months of the 1926-27 season.

The government report, as of July 8, giving the forecast on acreage in cultivation July 1, 1937, as 34,192,000 acres vs 30,960,000 last year, was somewhat smaller than generally looked for.

Substance of Washington's crop summary for week ended July 13: "In the cotton belt temperatures were mostly moderate, and rather widespread showers occurred. In general the weather continued satisfactory and cotton made good progress, with conditions favorable for holding weevil in check in most sections, except in part of the Southwest."

The outlook for the continuance of good trade in the cotton textile division appears bright. A larger American cotton crop is anticipated, which is expected to sell at a fair price. According to reports, large grain crops are in the making in the United States, with good prices prevailing, particularly for corn. In Canada, however, due to drouth, the wheat crop in that country is expected to be small. This feature will likely redound to the benefit of the United States since good crops of grain and good prices would make the West prosperous, and a good cotton crop, with good prices, would help the South materially. All of which would tend to bring good trade to the industrial North and East and to all America.

AMERICAN COTTON

Aug. 1 to July 9—Bales—	This season	Last season
Brought into sight (marketed)	13,966,000	12,980,000
Exports from the United States, including Canada	5,644,000	6,108,000
Spinners' takings, world	14,129,000	12,636,000
Stock at all U. S. ports, July 9	1,145,000	1,340,000

WORLD'S VISIBLE SUPPLY OF COTTON

July 9—Bales—	This year	Last year
American	3,253,000	3,848,000
Other kinds	2,034,000	1,839,000
All kinds	5,287,000	5,687,000

TOTAL AVERAGE RAINFALL IN TEXAS, IN INCHES

Year—	1937	1936	1935	Normal
June	2.69	1.61	5.07	2.96
November 1 to June 30	12.11	15.79	21.10	16.63

BRITISH BOARD OF TRADE REPORT FOR JUNE

Year—	1937	1936	1935
Exports of yarn, pounds	14,000,000	12,000,000	12,000,000
Exports of cloth, yards	155,000,000	130,000,000	138,000,000

The above returns would indicate that trade in the United Kingdom is on the upgrade also, which, is pretty much the case throughout the world, and reflected in reports of record breaking consumption of all kinds of cotton.

CENSUS REPORT

United States—Bales—	This season	Last season
Consumption of lint, June	681,000	555,000
Consumption of lint, 11 months	7,362,000	5,744,000
Mill stocks, June 30	1,551,000	989,000
Stocks in public storage and warehouses, June 30	3,092,000	4,524,000
Stocks in mills, public storage and warehouses, June 30	4,643,000	5,513,000
Stocks in mills, public storage and warehouses, May 31	5,403,000	6,329,000
Active spindles during June	24,556,000	23,021,000
Active spindles during May	24,659,000	22,833,000
Consumption of lint in Cotton Growing States, June	568,000	468,000
In New England States	93,000	71,000
In All Other States	20,000	16,000
In the United States	681,000	555,000
Consumption of lint in Cotton Growing States, 11 months	6,138,000	4,828,000
In New England States	990,000	750,000
In All Other States	234,000	166,000
In the United States	7,362,000	5,744,000

J. W. Sanders Cotton Mills, Inc., with several plants in Mississippi, has had Robert & Company, Inc., engineers, Atlanta, Ga., make plans for additions to the Magnolia (Miss.) plant and the Meridian (Miss.) plant. A two-story addition, 26x150 feet, will be erected at the Magnolia plant, and a 3-story addition, 45x103 feet, will be erected at the Meridian plant. The total cost of the two additions, plus equipment, will be about $100,000.

Advance Thread Company, Salisbury, N. C., is having a building remodeled in Hendersonville, N. C., where operations will be begun.

SPECIAL FORMULATION

—SAVE-LITE'S ANSWER TO TOUGH PAINTING PROBLEMS

. . . and it's the only true answer to the varied conditions interior paint must meet in your plant. No single white paint can meet them all—economically!

One Save-Lite for general interior painting use . . . other specially formulated types for special conditions—that's the basic Save-Lite "Plant Conditioning" plan. It has proved its success in hundreds of leading plants.

Let The Sherwin-Williams painting engineer go through your plant—section by section. He will tell you just where you need Save-Lite and exactly which type to use. His recommendations will be based upon his long experience in filling the needs of a wide variety of industrial plants and an even wider variety of painting conditions prevailing in them. His services are free.

The picture shows the bright, clean sewing room of Pacific Mills, Lyman, S. C., where the famous "Pacific" and "Truth" sheets are made. Here employees "see faster", do quicker and better work thanks to Sherwin-Williams Save-Lite.

FREE—this complete report on "Plant Conditioning". Write for it to The Sherwin-Williams Co., Cleveland, Ohio, and all principal cities.

COVER THE EARTH

SEE THE SHERWIN-WILLIAMS PAINTING ENGINEER

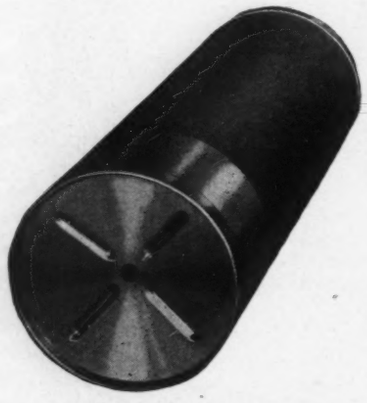
SHERWIN-WILLIAMS SAVE-LITE

THE PLANT CONDITIONING PAINT

NEW TEXTILE EQUIPMENT—PUBLICATIONS

Improved Roving Can By Sonoco

Sonoco Products Company, Hartsville, S. C., have announced the development of an improved roving can, which is now on the market. The present can is the result of several years of development. Sonoco has been making roving cans for a number of years



New roving can

but recently has developed a can of greater strength and durability. Substantially the Sonoco can is made of heavy laminated board. The manufacturers explain that it is treated by a special process to give it added strength. The can is reinforced with metal top and bottom; heavy one-piece cold drawn steel bottoms are rivited to the seven inch metal kick band; a heavy one-piece, seamless metal top rim encircles the top, inside and out.

These cans are made in standard green and maroon colors and have received widespread use under varying conditions.

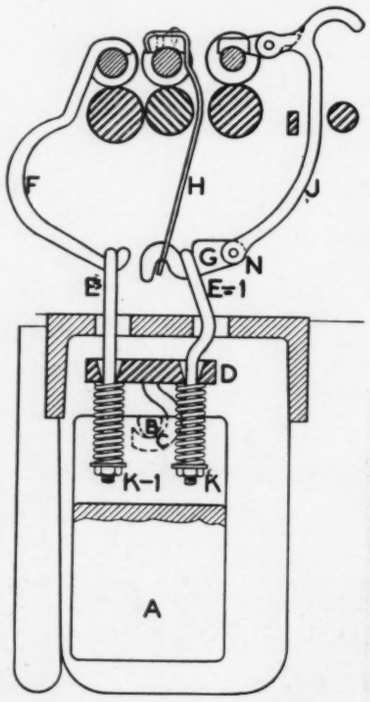
Stainless Steel Equipment for Dyeing and Other Processes

S. Blickman, Inc., Weehawken, N. J., have developed an extensive line of stainless steel equipment for dyeing, bleaching and other textile processes. The products include stainless steel dry cans, dye jig tubs, vats, tubs and tanks, reels, etc. The manufacturers, who have been specialists in stainless steel for many years, state that such problem as fabric waste through damage from roughened surfaces, color-deadening dyeing, time-loss in making color-changes, costliness of equipment-replacement caused by wear and tear, are overcome through the use of stainless steel. Stainless steel, it is explained, does not oxidize either inside or outside, it lends itself to welding and may be fabricated into shells of any desired length and diameter with virtually invisible seams which are seam-tight. In describing the stainless steel dye jig tubs, it is pointed out that stainless steel is non-absorbent and corrosion-resistant so that it does not influence color and shade, and since no boiling-out is required, color changing is a matter of minutes. All inside corners are fully rounded and the intersection of corners is spherical.

The Model J1 and the Model M Long Draft Roving Systems

Saco-Lowell Shops, 147 Milk St., Boston, Mass., has announced two new types of long draft roving frames —the Model J1 and the Model M, which are similar in characteristics, except for certain features in the design of the roll system, but both of which are distinct departures from the conventional roving frame formerly manufactured by the company, and from any system of long draft roving devised up to this time. The 4 distinct differences in these machines from any others are the weighting system, the arrangement of the rolls and their construction, the interrelated design and construction of roll stands and cap bars, and the use of an improved forming trumpet on the J1.

An improvement common to both

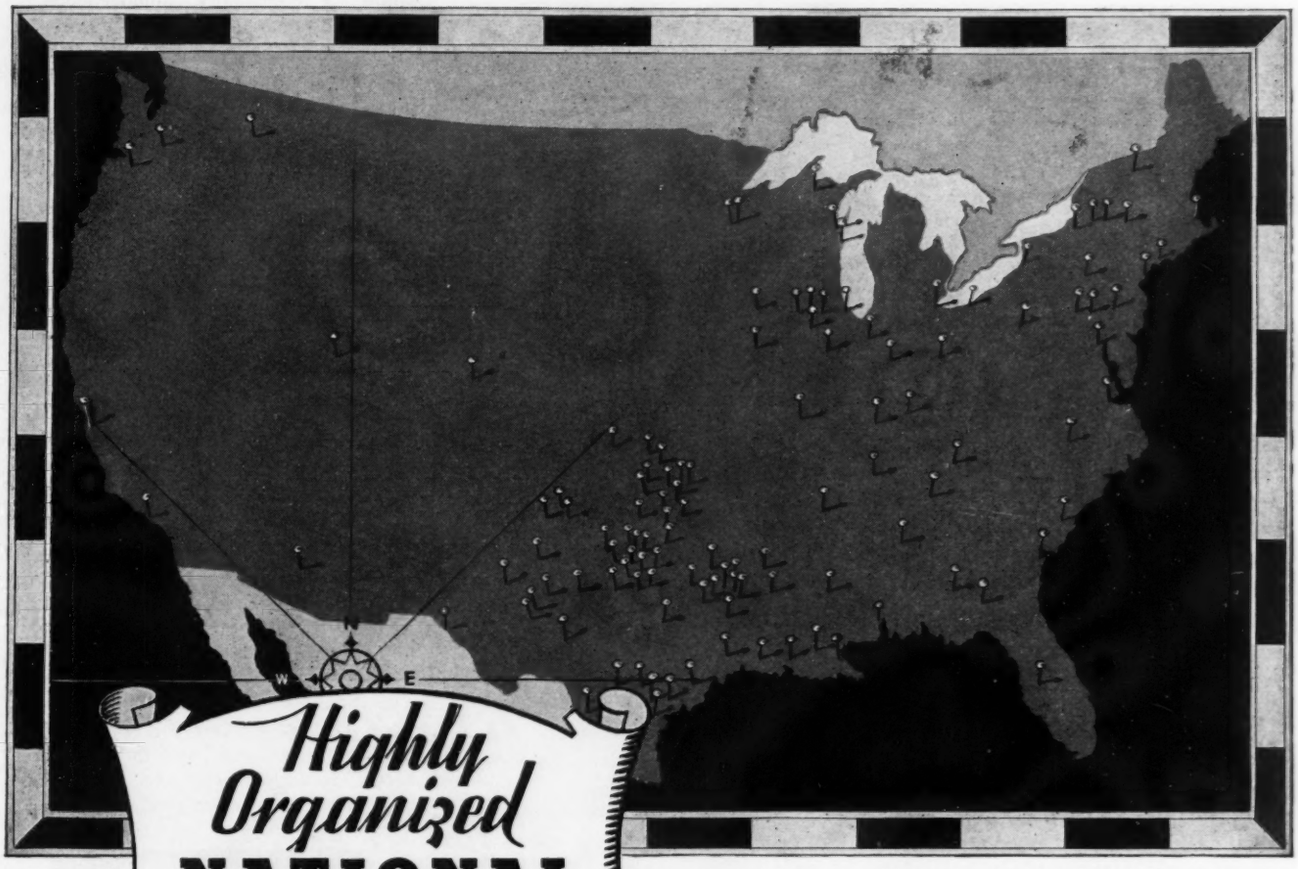


Uniset weighting system, used on Model M and Model J1 . . .

machines is the Uniset weighting system, a sectional view of which is shown as applied to the Model M, but which is also used in the Model J1. It is original in design and construction and gives constant weighting on all lines irrespective of the roll setting; has automatic self-adjustable saddles, hooks, and stirrups; has a predetermined spring loaded weighting; and a quick weight release. The newly designed weighting system overcomes the change of roll settings affecting the amount of weight on the various lines by utilizing independent hooks on the front and back roll and employing beams instead of levers.

The source of pressure in the Uniset weighting system, shown on the Model M, but which is also used on the Model J1 as previously stated, is a large cast iron weight *A* resting on a modified knife edge *B* which in turn is supported by a hook *C*. The hook *C* is riveted to the short beam *D*. The short beam *D* rests on two adjustable pressure springs fitted around the yokes *E* and *E-1* and retained in a preloaded adjustment by nuts and washers *K* and *K-1*. The yoke E is supported by the front weight hook *F* which rests on the arbor of the front roll. The yoke *E-1* is supported by the short lever *G* which in turn is supported at the front by a special design of weight hook *H* resting on and supplying the pressure to the second roll. The other end of lever *G* is fastened to the back roll weight hook by means of a flexible joint *N*. This construction permits a certain definite lateral motion of the lever *J*. This lateral motion allows the weight hooks *H* and *J* to assume invariably a free and natural position regardless of the roll setting. Their ability to assume this position makes it impossible for the weight hooks to bind or cramp, or to interfere in any way with the free running and easy turning of the top rolls. Most important, the weighting of the top rolls is always predetermined, constant, and unvarying.

The roll system on the Model M contains 3 lines of rolls, the first and second lines being of standard construction, top and bottom, the third being metallic and fluted. It is said that with this back roll, supplemented by the Uniset weighting system, that the roving will be more even, in varying degrees, depending upon how the fibers are controlled and drafted in the primary drafting zone. When tension draft is replaced by effective draft, in



Highly Organized NATIONAL SERVICE

● The most reliable distributors in all sections of the United States sell and service Republic Belting, Hose, Packing and other Mechanical Rubber Products.

These distributors carry ample stocks of many grades for prompt shipments. Their representatives are schooled by factory experts who, whenever required, work with them right on the job to solve any mechanical rubber problem.

Back of this highly organized national service is the mammoth Republic Plant which is equipped with every up-to-date facility to meet your requirements accurately and economically.

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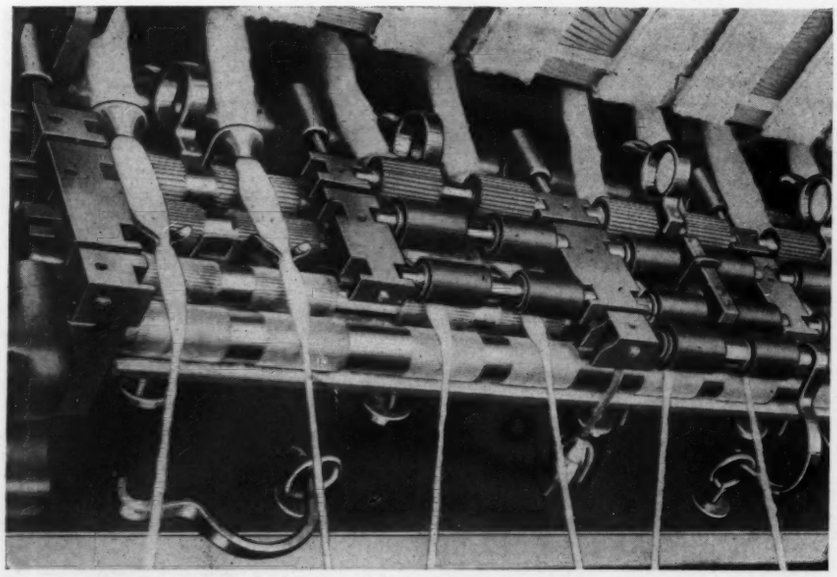


Roll arrangement of Model JI, with top rolls removed to show various portions . . . . . .

the ordinary slubber or intermediate, the number of short length irregularities is greatly increased. For this reason the draft in the primary zone of the conventional slubber or intermediate must be held to the order of 1.05 or 1.07, or some similar amount. As a result of this condition, the total draft on the slubber of conventional design must be held to 4.00 or 4.25 as a maximum.

In the Model M frame, on account of the effective fiber control built up as a result of roll design and Uniset weighting, the draft in this primary zone has been increased to 1.25 or 1.35 without the loss of uniformity or the creation of linear irregularities of short length, or fiber displacement and damage. This high relative draft in the primary zone has also made it possible to raise the effective draft in the final zone. Whereas, in the conventional slubber, this final zone draft generally reaches a maximum of 3.75, in the Model M it is normally set at 6.60, an increase of 77 per cent.

The roll arrangement of the Model J-1 consists of 4 lines of rolls with the newly-designed forming trumpet between the second and third line. The back line consists of a pair of metallic rolls which are fluted to create an effective fiber holding unit. The forming trumpet as used on the Model J-1 is a one-piece unit which forces both selvages of the sliver to the center, while the middle of the strand, which enters the trumpet in the form of a thin, flat ribbon, is held up and out of the way by the raised central portion. The shape of the trumpet causes it to be self-cleaning.

Rear view of improved forming trumpet of Model JI . . . .

For a quick weight release, a finger hole has been placed in the back top roll weight hook, permitting the weights to be lifted off the back 3 lines of the Model J-1, and the back 2 lines of the Model M, with a single finger, without the use of lifting levers. The interrelated design and construction of the roll stands and cap bars is such as to induce correct relationship between the settings of the top rolls and the bottom rolls. The front roll stand has a projecting lip, against which the front cap bar block is set and fastened, automatically producing the correct amount of overhang or setting forward of the front top roll with respect to the bottom roll. Lubrication requirements do not vary from the established ones, but it is said that the deep oil pockets, wick-fed, in the hooks and saddles simplify this important, but troublesome detail.

Aluminum Triformiate in Crystal Powder Form

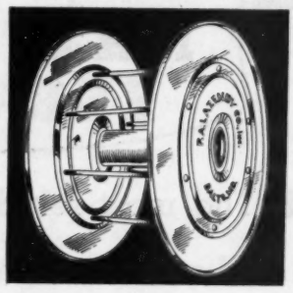
Hudson Industrial Company, 27 East 22nd Street, New York City, has announced the successful manufacture in bulk of Aluminum Triformiate, which is now available in crystal powder form. This product is of interest to finishing plants that waterproof fabrics either in the woven piece or knitted form and to the dyeing industry in general. The company states that the product is chemically homogeneous, pure, and soluble in water with greater strength than commercial Formiate of Alumina. The preparation, it is stated, is fully protected by patents.

New Hydraulic Truck Handles Warp Beams

Stackbin Corporation, Providence, R. I., has developed a new truck for handling warp beams weighing up to 2,000 pounds through narrow aisles between looms. The cradle, which lowers to within 9 inches of the floor, is raised hydraulically to a height of 28 inches. Two brackets, supplied with the truck, are secured to the loom and make it easy to lower the beam into the loom. The Stackbin truck is made in two different length wheel bases to fit both large and small looms. Its overall width is only 18 inches.

New Aluminum Barrel Runner

F. A. Lazenby & Company, Inc., 31-37 East Lee St., Baltimore, Maryland, have announced the Lazenby aluminum barrel runner, designed for use in any operation involving unwinding from skeins, and especially for handling light yarns, silk and rayon. The spool

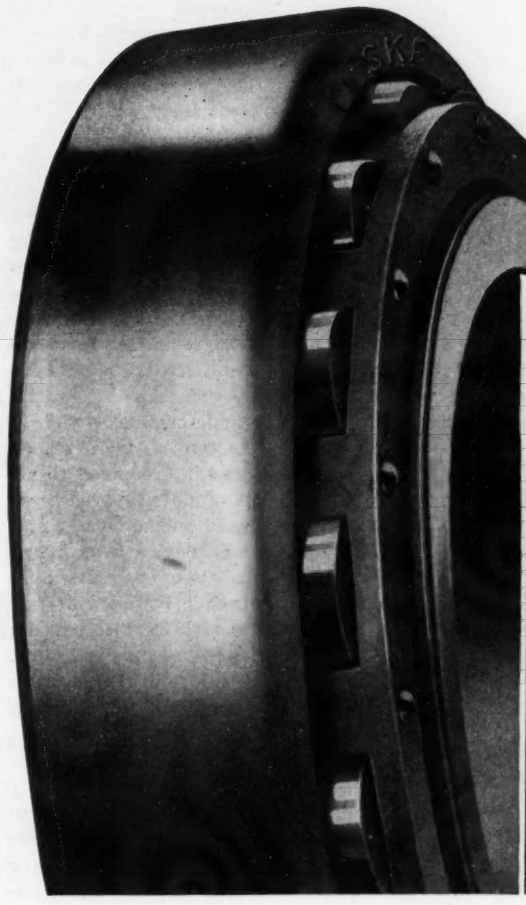


Aluminum barrel runner

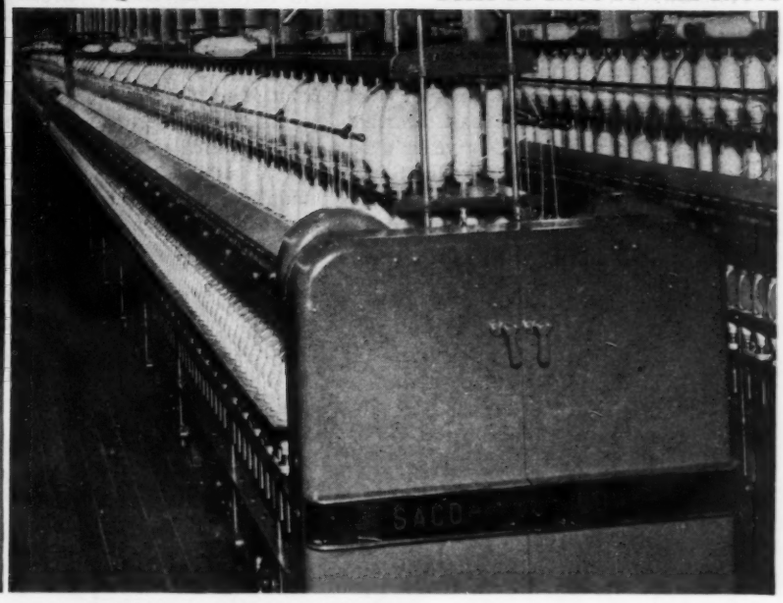
is 9 inches in diameter and 6 inches wide, but the width may be varied to suit local requirements. The bearings are bored to suit the size of the supporting arm. The construction of aluminum, it is explained, makes the barrel runner light, durable and strong, it is unaffected by mill atmospheric conditions, and has no protruding parts to snare the yarn.

"How to Run a Lathe"

The South Bend Lathe Works, South Bend, Ind., has announced the release of the 33rd edition of the machinists' manual, *How to Run a Lathe*. It contains 160 pages that are said to contain the latest and most authoritative information about the fundamental operations of modern lathe practice. Instructions on every phase of lathe work are given in detail in easily understandable language, accompanied by more than 300 illustrations.



SKF-EQUIPPED BUILT BY SACO-LOWELL SHOPS



Roller Bearing Spindles cost a little more, but

THEY'RE WORTH CONSIDERABLY MORE

● Here are a few of the spinning frames in the Startex (Spartan) Mills that owe their ability to produce large packages at consistent high speeds to 28,800 Saco-Lowell-SKF Roller Bearing Spindles.

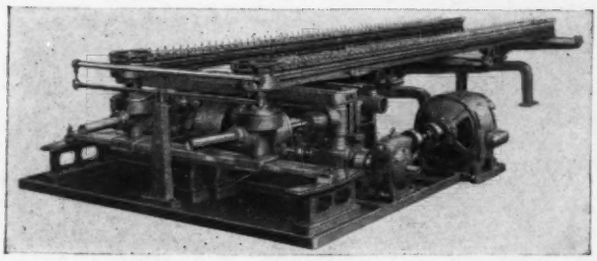
When the Spartan Mills go after peak production, they do it in a BIG way. In their mills, they use more than 107,000 of these spindles—one of many examples in which the slightly extra first cost of roller bearing spindles didn't make a difference. Why should it? Roller bearing spindles are *worth* more because they *save* more in power, lubrication, maintenance, and tapes. Next time you consider spindles for either new or existing frames, make certain they are SKF-equipped.

3906

SKF INDUSTRIES, INC., FRONT ST. & ERIE AVE., PHILA., PA.

SKF

BALL AND ROLLER BEARINGS



New swing tenter with automatic ball bearing features . .

New Swing Tenter

The Textile Finishing Machinery Co., Providence, R. I., have announced a new swing tenter, containing a majority of the patented features of the double beam automatic ball bearing tenter, as introduced a few years ago. The individual drive of the swing beam motion permits the independent operation and control of the speed over wide limits, it is pointed out, and it is possible to operate the fabric at higher speeds than previously. The drive has been so designed in relation to the swing motion as to obtain a uniform travel of the goods at all positions of the swing, it is explained, thereby providing a uniform tension on the filling threads during the entire travel of the goods over the tenter. This development is accomplished with vibration minimized through the medium of ball bearings, cut gearing, built-in gear reduction units, cushion type swing motion, etc.

Catalog by Rockwood

Rockwood Manufacturing Company, Indianapolis, Ind., has published a catalog of especial interest to mills covering the applications of Rockwood single-groove V-belts. It contains a complete listing, and by using this information the reader may become well-informed on these belts.

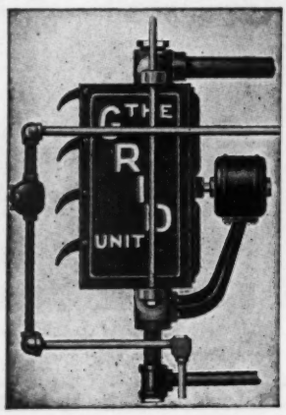
Alligator V-Belt Fasteners

Flexible Steel Lacing Company, Chicago, Ill., has announced a new fastener for joining C-section V-belts of fabric core, cross weave construction.

The fastener makes practicable the installation, shortening or replacement of V-belts on the job without delays or the necessity of tearing down expensive installations. Unique features of the Alligator V-belt fastener are the double rocker pin supported in bronze bushings and the method of holding the end plate to the belt end without materially weakening the belt or bulging its sides. The rocker pin is made of special alloy steel hardened to give long lasting service.

Humidifier for Unit Heater

The Unit Heater & Cooler Company, Wausau, Wis., has made available a humidifier to be attached either in front of or directly behind a unit heater. It is not necessary to install air lines or extra piping when the humidifier is installed. The operation of the humidifier is at temperatures higher than the room atmosphere, which causes quick and instantaneous absorption



Humidifier for unit heater

of the humidifying fluid or gas. It may be operated with the unit heater or as an individual unit, and even though the fan on the unit heater is shut down, the humidifying action of the device continues to function until such times as desired conditions are reached in the room, when the controls on the humidifier will shut it down.

Centrifugal Pump Catalog

Aurora Pump Company, Aurora, Ill., has issued a new centrifugal pump catalog unit as well as other literature concerning the improved line of centrifugal and sump pumps and cellar drainers.

New Color Announced in Booklet

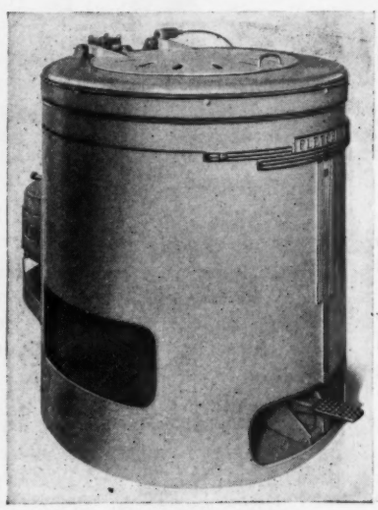
E. I. du Pont de Nemours & Company, Inc., dyestuffs division, Wilmington, Del., has published a new booklet defining the uses of Monastral Fast Blue BS, a product recently placed on the market. The booklet tells in what forms the various types of the color are available. It also treats of the uses of this new pigment in printing inks, paint, lacquer and enamels, wall paper, coated paper, paper, coated textiles, etc. In several instances samples of the use of the new shades are carried in the publication.

Constant Tension Tape Assembly

Saco-Lowell Shops, 147 Milk St., Boston, Mass., has made available a constant tension assembly for keeping the proper amount of tension on tapes on spinning frames. When the tape tension is less than normal, the tape slips on the spindle, resulting in a wide variation of speed from spindle to spindle. This in turn causes a variation from the predetermined twist in the yarn. If the tension is increased to a point beyond that required to secure a condition of no slippage, there is a side pull placed on the bolster and spindles. The new device is designed to overcome all of these operating difficulties. The principle involved is that the movements about a certain part on the tension device are always the same, regardless of the position it may settle into upon the wearing of the spinning tape.

Fletcher Standard Extractor

Fletcher Works, 2nd St. and Glenwood Ave., Philadelphia, Pa., has made available the standard extractor which is said to embody the latest improvements in design and structural details. The spindle and bearings are flexibly mounted between heavy rubber rings, adjustable for compression. It is equipped with ball and roller bearings throughout which run in oil. The attached angle countershaft is equipped with clutch and tight and loose pulley with automobile transmission from horizontal to vertical countershaft. They are built in four sizes and four speeds, from the 17-inch basket to the 30-inch basket, with speeds from 1500 r.p.m. to 1100 r.p.m.



Improved standard extractor

PILE 'EM HIGH!

THEY WON'T TOPPLE OVER

• Here is an actual photograph of a textile shipment in H & D boxes after having traveled 600 miles and stacked for 9 days as illustrated. These boxes were then re-shipped to the processor without re-packing. With 1400 lbs. piled on the bottom box, the least sag would cause the stack to topple over. But Hinde & Dauch "super-strength" textile boxes cannot sag. They carry merchandise up to 500 lbs. with perfect safety, both in transit and in storage. For complete information, write—

The Hinde & Dauch Paper Co.
454 Decatur Street, Sandusky, Ohio

HINDE & DAUCH

SUPER-STRENGTH CORRUGATED SHIPPING BOXES

NEWS ITEMS WITH A TEXTILE SLANT

New Representatives to Handle Koroseal Textile Sales

Mr. Fentriss

Mr. Long

Mr. Cole

The B. F. Goodrich Company, Akron, Ohio, has announced the appointment of three new representatives who will devote their efforts exclusively to the sale of Koroseal materials to the textile industry.

O. F. Fentriss will call on the textile trade in the states of Georgia, Alabama, Mississippi and Tennessee. He will maintain headquarters in Atlanta, Georgia.

J. O. Cole has been assigned the states of North Carolina, South Carolina and Virginia with headquarters at Greenville, S. C.

F. W. Long will have charge of sales in Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont and will have headquarters in West Newton, Mass.

Gaylord and Bogalusa Consolidate

Robert Gaylord, Inc., and Bogalusa Paper Company, Inc., have formed, upon consolidation, the Gaylord Container Corporation, a Maryland corporation, with principal offices in St. Louis, Mo., at 2820 S. 11th St. This move, without making a change in personnel or policies, brings together two organizations that have long been closely associated. It combines the pulp, board, and paper mill properties of Bogalusa with the large converting and selling facilities of Gaylord, in the corrugated and solid fiber shipping container, folding carton, and bag fields. The new corporation is equipped with an up-to-date mill laboratory to keep in the forefront of pulp and paper making developments. A. Conger Goodyear is chairman of the board and Clifford W. Gaylord is president of the company.

Russell Gill, Vice-President Southern Sizing Company

Russell Gill, who recently resigned his position as sales and technical representative of Stein, Hall & Company, Inc., in the Georgia, Alabama and Tennessee territory, has become associated with the Southern Sizing Company, Atlanta, Ga., as vice-president. S. C. Simmons is president of this company.

Oswald of Paramount in Europe

L. H. Oswald, vice-president of Paramount Textile Machinery Company, Chicago, Ill., sailed July 14 for Europe, where he will investigate foreign developments in textile machinery and patents.

Veeder-Root Moves Greenville Office

Southern sales headquarters of Veeder-Root Incorporated, manufacturers of counting devices for the textile industry, have been moved to 231 West Washington St., Greenville, S. C. Edwin Howard is southern sales representative.

American Aniline's Charlotte Branch in New Quarters

American Aniline Products, Inc., has moved its Charlotte (N. C.) branch into new and larger quarters at 301 E. Seventh St.

Committee Chairman Announced for Carolina Yarn Association

Committee chairmen for the fall tournament of the Carolina Yarn Association, which will be held at Pinehurst, N. C., October 29 and 30, were announced as H. M. Bailey, Jr., North American Rayon Corporation, chairman of invitations; C. W. Causey, Jr., Kahn & Feldman, chairman of prizes; J. R. Morton, Tubize Chatillon Corporation, chairman of entertainment; J. H. Mason, Industrial Rayon Company, chairman of skeet shooting; and S. L. Diggle, Dixie Mercerizing Company, chairman of golf tournament.

Two companies were elected to membership. They are John P. Maguire & Company, represented by Taylor R. Durham, Charlotte, N. C., and Southern Mercerizing Company, Tryon, N. C.

Fallstrom With Hercules

Iver W. Fallstrom has become a member of the technical staff of the Hercules Powder Company, Wilmington, Del., and will be located at its Providence Drysalters Division at East Greenwich, R. I. He has spent 5 years at the Aspinook Company as chief chemist, and the past 5 years at the Sayles Finishing Plants.

Textile Drying Research Described

U. S. Institute for Textile Research, Inc., 65 Franklin St., Boston, Mass., has released a 16-page booklet describing the purposes, program, organization, administration, and financing of the co-operative study of textile drying under the auspices of the Institute. It explains how the progress reports and other services of the study may be obtained, and also contains a description of the Institute's co-operative research plan.

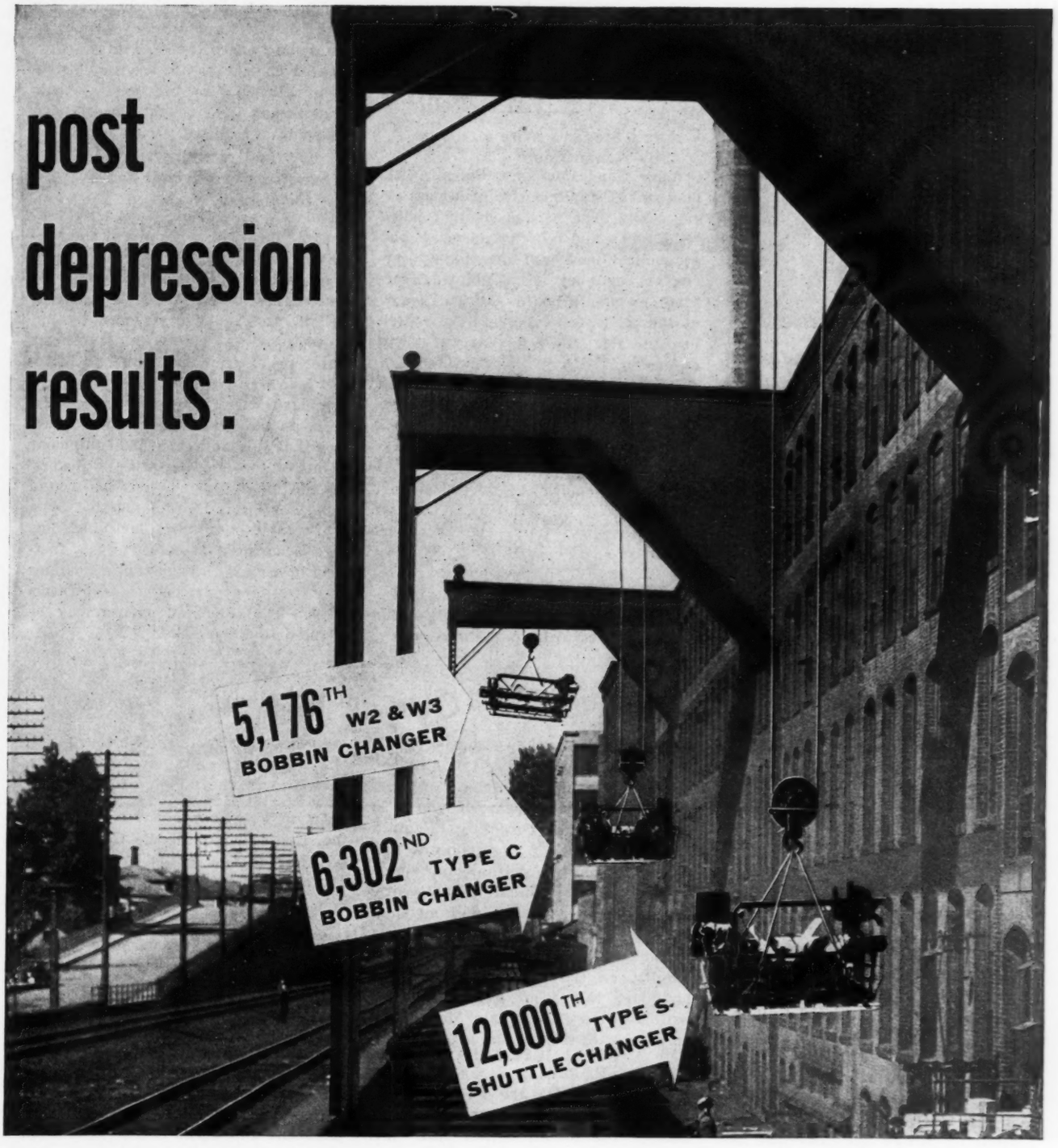
Developments in Koroseal Textile Roll Coverings

The first application of Koroseal as a roll covering material was made on the cots of a spinning frame in 1935. The success of this and the many other test installations which followed has resulted in its wide use by the cotton textile industry during the past year as a roll covering for various types of textile machinery, it is stated by The B. F. Goodrich Company, Akron, Ohio, the manufacturers.

The long life of Koroseal roll coverings is evidenced by the fact that many of the cots making up this original test installation in 1935 are still delivering satisfactory yarn. Other advantages of this new synthetic elastic material are that it has a high coefficient of friction; it may be produced at a controlled density; it is non-porous; it possesses high resistance to oil, grease, and chemicals; and it lends itself readily to re-grinding.

Some of the first Koroseal-covered cots showed a tendency to cause ends-down and licking-up as well as being subject to fluting during shut-downs, but it is said that these objections have been corrected.

At the present, experiments are under way regarding the application of Koroseal to spindle tape. It is believed that impregnating the tape with this material will eliminate slippage and deterioration caused by oil and grease.



On May 20th we finished and shipped the 12,000th Type S Shuttle Changer for Silk and Rayon. That same day we were also making shipments of Types C and W looms as shown. The time has come when it is no longer a question of whether a mill *should* re-equip—they *must!* Where there lurks any doubt we are prepared to make an analysis to show what can be done with modern equipment.

CROMPTON & KNOWLES LOOM WORKS

Allentown Philadelphia **WORCESTER, MASSACHUSETTS** Charlotte, North Carolina

CROMPTON & KNOWLES JACQUARD & SUPPLY CO., PAWTUCKET, R. I.

Wood Joins Royce Chemical

P. J. Wood, formerly vice-president of the Oriental Silk Printing Company, Paterson, N. J., has joined the staff of The Royce Chemical Company, Carlton Hill, N. J., and will devote all his time and effort to the New England territory, both in marketing and service to the textile industry. He is a graduate of the University of Leeds, England, and served his apprenticeship with the Bradford Dyers Association. During the past few years he has planned, installed, and set into operation, two new dyehouses and finishing plants. Mr. Wood brings to his new responsibility a fine background of practical experience. Mr. Wood is a past president of the American Association of Textile Chemists and Colorists. Recently he had charge of starting operations in the new plant of Stonecutter Mills, Spindale, N. C.

P. J. Wood

Jester Transferred

Simeon Jester, Jr., formerly with the sales department of the Philadelphia office of American Engineering Company, has been transferred to the Chicago office of this company. Mr. Jester will supervise the western Hele-Shaw pump and Lo-Hed hoist agents as well as be responsible for the direct sales of marine deck auxiliary equipment.

Designers for Industry Establish New Office

Designers for Industry, Inc., Cleveland, O., industrial designers and product stylists, have established New York quarters in the International Building, Rockefeller Center. H. C. Gooding is business manager and George E. Henry is sales promotion manager.

Gains of Cottons

Speaking before the American Association of Textile Technologists early in June, Charles K. Everett, manager of the new uses section of the Cotton-Textile Institute, Inc., sketched the efforts of the Institute to capitalize to its fullest, the results of the handiwork of the technologists. Mr. Everett pointed out that National Cotton Week, with its some 40,000 participating retailers, was the most spectacular event of cotton promotion. He told of the intense competition between cotton and the other textile fibers, and described the two-way cent-a-bale plan which has the active support of mills representing about 70 per cent of the spindles in the country. Mr. Everett explained that closer co-operation will be necessary between research workers and the Institute in the future, if cotton promotional work is to go forward.

Colored Stapling Wire by Acme Steel

Acme Steel Company, Chicago, Ill., now makes stapling wire of almost every color. The new product is called Colorstitch and affords an easy and economical means of dressing-up corrugated or fiber board shipping cartons; a sample board showing a few of the colors is available. Colorstitch is obtainable in colors that will blend or contrast with plain or printed cartons; it is made in all standard stapling wire sizes and has rust-resisting qualities.

Air Shipment Facts

The Hinde & Dauch Paper Company, Sandusky, O., has published a booklet in collaboration with American Airlines, Inc., entitled *How to Ship by Air Express*. In it shippers are reminded of new merchandising possibilities open to them since development of air express to its present efficiency. Samples and special merchandise, for instance, can be shipped over-night to almost any point in the country. Corrugated fiber boxes are used extensively in air express because of their strength and light weight. No outside wrapping is required.

A Supersensitive Evener Pedal for Pickers

Saco-Lowell Shops, 147 Milk St., Boston, Mass., have improved the sensitivity of the No. 7 evener on pickers to a considerable degree by refining its construction, eliminating superfluous weight, and reducing friction by improved design. Lighter and stronger materials are now used and anti-friction bearings are substituted for plain bearings where deemed necessary. Tests on this evener were so satisfactory that it is now standard equipment on all of the new one-process pickers. In the new construction the round pedal shaft has been supplanted by a heat-treated steel knife bar which has been accurately machined; it is fastened in a rigid and substantial manner to a steel cross girt between the frame sides. The improved evener may be adapted to old pickers.

Obituary Items

HARRY P. MEIKLEHAM, agent of the Pepperell Manufacturing Co., Lindale, Ga., passed away on Friday evening, July 23, following a heart attack while at dinner in New York City. Captain Meikleham, one of the pioneers and leaders in southern textile manufacturing, had been at Lindale for 37 years. He was 65 years of age, and only last June was paid a remarkable tribute at Lindale, by the people of that community, on the occasion of his 65th birthday, the event being reported, with a tribute to Captain Meikleham, on page 62 of the July issue of COTTON.

ROBERT E. ROYALL, 84, passed away at his home in Wake Forest, N. C., June 14. He was at one time president of the Royall Cotton Mill. Mr. Royall was prominent in the affairs of Wake Forest College and in the local community.

E. T. SWITZER, formerly secretary and treasurer of the Cleveland Cloth Mills, Shelby, N. C., and of the United Weavers, Inc., Lowell, N. C., passed away June 19.

ANDREW E. GREENE, who held an executive position with the Worumbo Mills, Lisbon Falls, Me., passed away at his home at the age of 77.

WILLIAM E. CHADWICK, who had been associated with the Newburgh (N. Y.) Bleachery for about 40 years, passed away the middle of June.

DAVID F. SHORT, overseer of weaving, Consolidated Textile Corporation, Lynchburg, Va., passed away at the age of 60 recently.

W. C. BOBO, 54, formerly general manager of the Judson Mills, Greenville, S. C., passed away at his home in Greenville, S. C., after a few days' illness. He organized the Bobo Weaving Mills, Spartanburg, S. C., and remained with that company until only a short while ago.

CLEVELAND D. WELCH, SR., 54, vice-president and agent of the Cramerton (N. C.) Mills, Inc., passed away July 8. Mr. Welch died following a heart attack. He had been connected with the Cramerton Mills for 30 years.

EDWARD M. JOHNSON, vice-president, secretary and treasurer, Arnold, Hoffman & Company, Inc., Providence, R. I., passed away at his home in East Providence on July 7, after an illness of three weeks. He had spent his entire business career with the one company, coming to Arnold, Hoffman & Company, Inc., immediately after finishing his schooling. He was 58 years of age.

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PERSONAL NOTES
about Men You Know

EDWARD L. MARTIN, vice-president of the H. & B. American Machine Company, Pawtucket, R. I., has been elected president of the company succeeding the late CHARLES E. RILEY, who passed away June 4. Mr. Martin has been with the company since 1899 when he served as apprentice in the various departments. He has worked at jobs from road fitter for the company, being salesman, and sales manager, to his present position with the company. When the American company was formed in 1912 Mr. Martin was elected secretary. He is also interested in the Booth Manufacturing Company, New Bedford, Mass., the Palmetto Cotton Mills, and is a director in a number of other corporations.

E. L. Martin

R. D. HARVEY, assistant agent since 1930, has been made agent of the Pepperell Mfg. Company, Lindale, Ga., succeeding the late CAPTAIN H. P. MEIKLEHAM. Mr. Harvey has been with the plant since leaving Georgia Tech.

NEWTON G. HARDIE has resigned as superintendent of the Inman (S. C.) Mills to become assistant general superintendent of the Gossett Mills, Anderson, S. C., operating the Riverside, Toxaway, Ladlassie and Gossett Finishing plants at Anderson, and the Williamston, S. C., and Pendleton, S. C., plants. J. W. WOOD is general superintendent of these mills.

EDWIN H. ARNOLD has been elected first vice-president and treasurer of Arnold, Hoffman & Co., Inc., Providence, R. I., manufacturers of chemicals, indigo, dyestuffs, starches, gums, etc. to succeed the late EDWARD M. JOHNSON, whose death is reported in the obituary column of this issue.

W. G. MCCOLLUM, who recently resigned his position as head of the cotton department of Marshall Field & Co., manufacturing division, Spray, N. C., is now associated with Gilbert & Thompson, cotton brokers, Greensboro, North Carolina.

C. C. (CAT) ANDERSON, formerly connected with Graton & Knight Company, has become associated with the Charles E. Schieren Leather Belting Company, of New York City. Mr. Anderson will continue to maintain headquarters in Greenville, S. C., in his new connection.

J. MANNING BOLT, formerly overseer of weaving at Brandon Corporation's mill, has been made superintendent of the Gossett Mills, Williamston, S. C. Mr. Bolt has also been with the Ware Shoals Manufacturing Company, Ware Shoals, S. C., and the Lumberton (N. C.) Cotton Mills.

ARTHUR S. JARRETT, formerly assistant general manager of the Gayle plant, Springs Cotton Mills, Chester, S. C., has become general superintendent of the Highland Park Manufacturing Company, Plant No. 3, Charlotte, North Carolina.

H. W. WHITCOMB, who has been manager of the Lumb Knitting Company at Pawtucket, R. I., one of the plants of the Marshall Field & Company Manufacturing Division, has been transferred to the general offices at Spray, N. C., as director of purchases for the manufacturing division.

HORACE G. WOODBURY has been made manufacturing agent of the Wamsutta Mills, New Bedford, Mass. He has been with the company since 1930.

W. H. TAYLOR has resigned as general manager of the Slater (S. C.) Manufacturing Company, a position he has held since 1927.

E. L. MCCORMACK, formerly assistant superintendent and designer, Springs Cotton Mills, Gayle Plant, Chester, S. C., has resigned to accept a position in the same capacity with the Spencer Corporation, Spindale, N. C.

J. A. TALBERT has become superintendent of the Cliffside (N. C.) Mills, succeeding E. T. COMBS, who has become general superintendent of the California Cotton Mills Company, Oakland, Cal.

H. B. MILLER has been made superintendent of the Southern Brighton Mills, Shannon, Ga. He formerly was superintendent of the Pee Dee Manufacturing Company, Rockingham, N. C., where he is succeeded by W. P. CARGILL, formerly of Sand Springs, Oklahoma.

C. KISTER, Spindale, N. C., has been made carding superintendent of the Smithfield (N. C.) Manufacturing Company.

R. L. HULSEY has been made general overseer of carding and spinning at Edna Mills Corporation, Reidsville, North Carolina.

PAUL POE has been placed in charge of the waste department of the Bibb Manufacturing Company, Macon, Ga.

J. A. BURT, formerly overseer of spinning at the Laurel (Miss.) Mills, Inc., has been made overseer of spinning at the Avondale Mills, Birmingham, Ala.

CHARLES BLOUNT, JR., formerly executive vice-president of the United Piece Dye Works, Lodi, N. J., has become acting president of the company succeeding RUDOLPH BOEHRINGER, resigned.

W. THOMAS LOVE, JR., has been made treasurer of the Spencer Mountain Mills Company, Gastonia, N. C., succeeding his father, the late W. T. LOVE. Mr. Love, Jr., formerly was with the Ranlo Manufacturing Company, Gastonia, N. C.

WILLIAM J. CREGAN, who has been with the Ware Valley Manufacturing Company, Ware, Mass., for 18 years, has been made superintendent of the plant, succeeding ROBERT VINCENT, resigned.

CHARLES H. DIMICK has been made general manager of Textile Dyeing & Printing Company, with plants at Patson, N. J., and at Richmond, Va. Mr. Dimick succeeds WILLIAM ALEXANDER and NORMAN CASTLE, formerly general manager and sales manager, respectively, and will fill both of these positions in his present capacity.

GEORGE LODGE has been made overseer of finishing at the Elm Mills, Tilton, N. H.

CHARLES E. WILLIS has resigned his position as overseer of carding, LaFayette (Ga.) Cotton Mills, to become assistant to the superintendent, Morgan Cotton Mills, Inc., Laurel Hill, N. C.

(*Obituary Items on page* 94)

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1919
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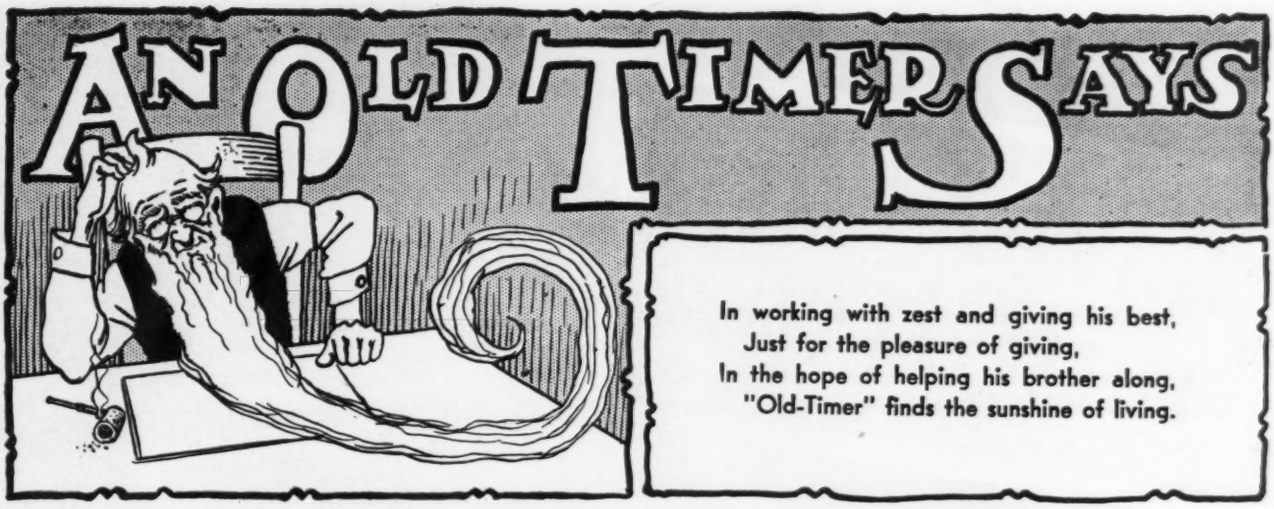

AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

"A Mill within a Mill"

(Note: Since this series is written in conversational style, it should be borne in mind that those paragraphs in regular type represent JIM's part of the conversation, and those in *italics* are OLD-TIMER's part. It should be noted that, because JIM predominates in this interview, this method is exactly opposite to that usually used in these conversations.)

HA! HA! HA! *Oh, Ha! Ha! Look at him. Don't he look dignified bobbing up and down on that merry-go-round. Hey there,* JIM.

Well, for the love of Mike, if it ain't OLD-TIMER himself!

Yeah, and JIM, *you need not fool yourself by thinking that that pair of dark glasses will keep people from knowing you. I only wish a bunch of your doffers could have seen you on that merry-go-round.*

Oh, I was just taking my grand-son here for a ride.

Sure, JIM, *just like I take my grand-children to the circus; you know I don't care anything about the circus myself.*

Certainly, OLD-TIMER, you're telling me?

Now since we have both shown what good liars we are, suppose we just let the grand-children ride the merry-go-round and do all the other things they want to while you and I sit here in this cool spot for a good chat.

You know, OLD-TIMER, I haven't seen you since last spring, and I have a lot to talk about and probably one or two things I would like a little advice on.

O. K., JIM. *You changed tobacco? What kind is that you're smoking?*

Yes, believe I have changed since I saw you last. Have some?

Oh, no, I'll stick to the old reliable that I've been smoking for 20 years, but I am glad to see you have changed, JIM.

Glad to see I've changed? What's the idea? Just what is it to you, OLD-TIMER? You got stock in this tobacco company, or something?

Not anything like that, JIM. *I am just glad to see that you are still not too old to change your habits and I only hope that proves you can also change your mind. We old timers,* JIM, *who are not alert enough to realize that we must change our old ways of thinking—our old ways of managing help, and, in fact, practically all the ways we have been doing things—well, it's just going to be too bad, that's all.*

Now you are talking, OLD-TIMER, and that brings up one of the questions I want to ask your advice about.

O.K., shoot, JIM.

Well, you know they gave me an assistant.

Sure. I heard about it. What kind of a chap is he, JIM?

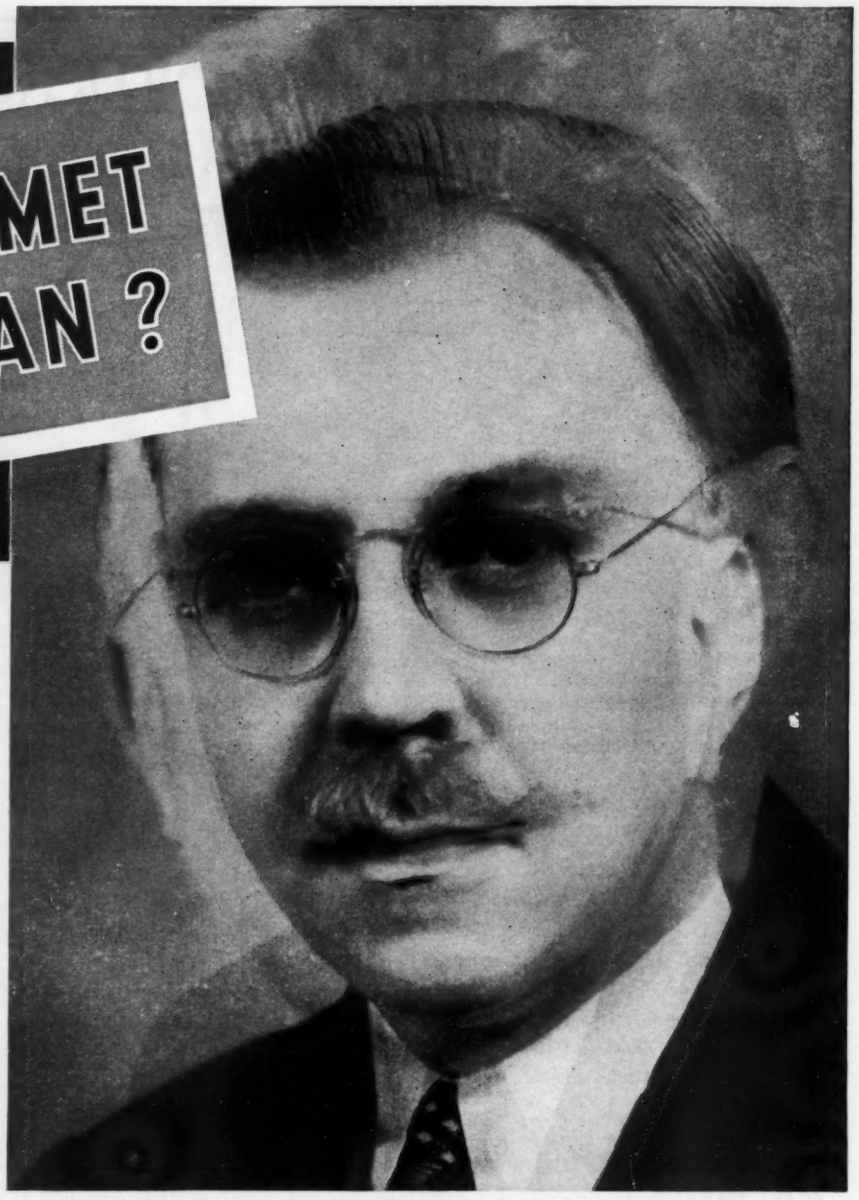
Oh, he's one of them textile graduates, and I suppose he thinks he knows all there is to know about manufacturing, but I can take care of that, all right. The thing I can't quite figure out in my mind, OLD-TIMER, is that the boss came around the other day and after saying some pretty nice things about how long I had been with him, etc.—and, by George, he still has not forgotten how I brought that card room out of a hole and how the spinning and weaving production picked up—he winds up by saying: "JIM, you can have two weeks off; go down to the beach and have a good time."

Gosh, that's fine, JIM! *That's the kind of a boss a man will just work his darn head off for; you are sure some lucky guy to be working for such people—*

Hold on just a minute, OLD-TIMER. That all sounds darn fine and everything, but I have been wondering if the boss wanted to get me out of the way for two weeks in order to give that young whippersnapper assistant of mine a chance to show what he can do—

Shut up, fool! Haven't I just got through explaining that we old timers must be big enough, broad-minded enough, unselfish enough—you are just a jealous old fool; I thought you had more common horse—no, JIM, *don't fool yourself. If that boss of yours wanted to replace you he is not weak-kneed enough to go at it by being* good *to you; he'd just say "Scram! Here's a month's salary to tide you over until you can get another job." 'Tain't like it used to be,* JIM; *these mill presidents have changed some of their*

HAVE *You* MET THIS MAN?



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ways of thinking, too. Now forget it and be happy in the realization that you have a boss who is not only appreciative of your long years of faithful service, but, by golly, is big enough to prove his appreciation by making your load lighter by furnishing you an assistant and thereby giving you an opportunity to sit in his office with him to discuss the bigger problems he is facing today with all the complications he is confronted with in Federal legislation, the impending labor problem, what to spend money for in order to prepare your mill for that inevitable depression that will be showing up again some of these days, and—

O. K., OLD-TIMER, I guess you are about right, so let me tell you about my new mill—

New mill! Are they going to build a new mill, JIM?

No, OLD-TIMER, I have built a new mill right inside of the one we have.

Quit beating the devil around the stump, JIM, *and tell me what you are talking about.*

Sure, just give me time, will you. Anyhow, here's what gave me the idea:

I go to one of the textile meetings and hear some fellow tell about running 2.00-hank intermediate in his spinning to make 30s warp, or I hear some other fellow say that a setting of 12-gauge on his feed plate to licker-in gives him the best breaking strength and another fellow will say a 10-gauge gives him the best; someone else says five doublings on drawing is better than six doublings, and some other fellow explains about something else. Well, how in the dickens am I to find out what is best for *my* mill, out of all these things I hear discussed? Then my boss comes along and he says he hears that such-and-such a mill is using 15/16-inch cotton and getting a better front roll speed and everything than we are getting with our full inch cotton, and, gosh! all I can say to him is, "Now, boss, you know 15/16-inch cotton can't give better results than 1-inch, but he isn't satisfied; he says, "Yeah, I know that's what they *all* say, but, darn it, that mill is using 15/16-inch cotton and Mr. X showed me his cost sheet, and their manufacturing cost is as low as ours; their production is just as good as ours—they are simply saving the difference in cost of 15/16-inch and 1-inch cotton, which you know is quite an item with the pounds we are turning out now.

You see, OLD-TIMER, just *telling* the boss that 15/16-inch cannot give as good results as inch cotton does not satisfy him simply because everybody has always *said* so. Well, anyway, I wanted someway to *show* my boss about these things he hears other mills are doing, and I wanted someway to *show* myself about all these things I hear discussed at the textile meetings, and the things I read about in the HOW OTHER MEN MANAGE department of COTTON.

You know we have 10 slubbers, so I set aside the necessary cards to run one slubber and marked enough card and drawing cans to run that slubber so I could keep this stock entirely separate from everything else in the mill. This is just one-tenth of our mill, having 10 slubbers in all.

I also painted the base (not the top) of enough slubber bobbins to run two intermediates; also sufficient intermediate and speeder bobbins, to run about 32 spinning frames with either the intermediate or speeder bobbin going to the spinning. Then, with about 300 looms set aside for running the stock from these spinning frames, you see, I have a complete "laboratory mill" right inside of our regular mill. What a satisfaction it is now to say to the boss when he tells me that a certain mill is doing this and that: "O. K., boss, we will set up our machinery in our 'laboratory mill' and give that idea a three-months' or six-months' test right along beside our regular mill, and by having that testing boy keep an accurate record of breaking strength, variation in numbers, ends-down on spinning and fly frames, spoolers, warpers and looms, by George, you will not have to have so many arguments about what we *think* is best; confound it, I will *know* what I am talking about."

You see, OLD-TIMER, we compare the tests from our "laboratory mill" with the tests from our regular mill and by letting the tests run for a number of weeks or months in order to get the varying manufacturing conditions caused by outside temperatures, humidities, etc., etc., we obtain definite information which is dependable and accurate so far as our local mill conditions are concerned. Then too, by having one-tenth of the machinery composing our "laboratory" all the overseers and assistant overseers, section men and operatives can observe the operation of the machinery, both in the "laboratory mill" and the regular mill, and if there is a difference, that is, if one set of machinery operates more efficiently than the other, out of all of these people, some of whom are pretty close observers, a number of them will be able to give us some pretty good practical information to compare with our theoretical data.

Of course, if we want to make a test on a different cotton from that which we are running, it will be necessary to run our sample cotton through the picker room separately and store it as picker laps to operate the laboratory cards which run the one laboratory slubber. These, and many other details of the laboratory mill will naturally work themselves out as we wish to put the different tests through our laboratory mill. However, don't forget that all settings of machinery in the laboratory mill must be restored to the original of the regular mill before starting any new tests. For example, if we are testing to find out the best speeds and settings on drawing rolls we of course put our experimental settings and speeds on the drawing in the laboratory mill.

Now, when we have finished making this test we make sure to restore the drawing speeds and settings in the laboratory mill to the same settings and speeds in the regular mill *before* we start a test on anything else. All of the settings, speeds, etc., in the laboratory mill must be the same as those in the regular mill *except* the speeds, settings or what not on the particular machines we wish the experiment or test to be based on.

Oh, boy! is my boss pleased, and am I pleased, and are the overseers pleased. You remember, OLD-TIMER, when you had that brain storm about the low grade (75 per cent strips, 25 per cent dog-tail cotton) yarn

(Continued on page 111)

CLINTON STARCHES

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QUALITY SERVICE

This is the Age OF SPEED and HIGH DRAFT SPINNING

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HOW OTHER MEN MANAGE

Practical Discussions by Cotton's Readers On all Varieties of Mill Subjects

WE invite our readers to make use of this department for the discussion of any and all problems arising in the mill or finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. The editors do not hold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

◆ ◆

Eliminating Soot from Yarn in the Spinning Room

EDITOR COTTON:

In accordance with the question on sooty yarn by "CONTRIBUTOR NO. 6657", which appeared on page 127 of the June issue of COTTON, and in which he stated that he thought sooty yarn was caused by the humidity, I am pleased to list my experiences with this problem of the spinning room.

1. Direct causes of sooty yarn
   a. Smoke and dust (main cause)
   b. New rings
   c. High traveler speeds
   d. Too heavy travelers
2. Aggravating factors
   a. Bad weather ("ceiling zero")
   b. Long run of doff (fine yarn or large package)
   c. Excessive long draft (hairy yarn)
3. Elimination of causes
   a. Smokeless air
   b. Electric power
   c. Sell coke to village instead of soft coal
   d. Displace air in spinning room frequently by blowing in filtered air
   e. Draw out old air if possible on floor level (tin pipes leading from spinning room to picker room)
   f. Change to warp-wind instead of filling-wind

As a matter of fact, a spinning mill built in the country, driven by electric power, the smoke stack (for heating only) built so that the frequent breezes will blow all smoke away from the mill, will have little complaint about sooty yarn.

On days of "heavy air", dust particles and soot particles seem to ride in the air, partly dissolved in the vapor. Naturally, if this vapor condenses it will settle on the yarn, depositing all impurities at the same time that are riding with it. It is, therefore, not the humidity as the contributor suggests, but the impurities in the vapor.

This point may be proved by putting yarn in plain water or by running yarn on a wet twister—there will be no soot.

A tiny 1/64-inch fiber has to be revolved a considerable length of time in sooty atmosphere before it turns black. Warp-wind covers the preceding layer quick enough, before the protruding fibers will have time to accumulate soot, and the soot cannot accumulate in any one spot.

The only effective remedy is to remove the soot from the air.

CONTRIBUTOR NO. 6663

EDITOR COTTON:

I notice on page 127 of the June issue of COTTON that your "CONTRIBUTOR NO. 6657" is having trouble with sooty yarn in his spinning room.

Our experience with sooty yarn has been that its presence is more noticeable in winter than in summer. I think this is true of most every mill. We observed that most of the trouble showed up on the second shift, which quits at 11 P. M., and when the mill was being steamed heavily, during cold weather.

The windows were closed tight and under this condition the heated area of the mill was from the roof *downward*. This hot air formed a cushion and prevented the cooler air that was around the spindles from rising. The motion of the spindles kept the cold air circulating around the spindles and it gathered more and more soot; the spindles revolving in this same air collected the soot from it.

We came to the conclusion that as we did not have soot in the summer when the windows were open that it was a matter of proper circulation of air. Our mill has monitors, which are easily opened, and we thought that by opening them slightly so that the circulation of the air would be better, the air around the spindles would be permitted to rise. We put this idea into practice and it eliminated sooty yarn.

"CONTRIBUTOR NO. 6657" keeps his windows tightly closed. Our method is just the opposite. We crack the ventilator windows just enough to permit some of the hot air to escape which allows the excessively humidified cool air to rise, thus preventing the soot from collecting on the yarn.

Our system is by no means perfect because the human element enters into it. Experience will teach how much to open the ventilators, but if the fellow who is responsible for the opening of them fails to

keep his eye open and ventilate the room properly, then the results are not so good.

Preventing excessive humidity in the room is a big help in alleviating sooty yarn. It is obvious that excessive humidity will make a heavier air, which will not rise without some method of assistance.

This method has been valuable to us and I see no reason why it would not work elsewhere.

CONTRIBUTOR No. 6668

Preventing Travelers Unthreading after Doffing

EDITOR COTTON:

"CONTRIBUTOR No. 6643" is having trouble with his travelers coming unthreaded after doffing.* He is using a No. 1 round-point traveler, 2-circle on his 21½s warp, and a 5/0 round-point traveler, 1-circle on the 24s filling.

It is my opinion that this contributor could minimize the trouble which he is experiencing on his spinning by changing his warp traveler from a No. 1 round point to a 1/0 square point 1-circle, and his filling over to the square point traveler instead of the round. It has been our experience that the square point travelers do not wear the rings any faster than the round ones—certainly not to an appreciable extent.

CONTRIBUTOR No. 6692

EDITOR COTTON:

I have just read the question by "CONTRIBUTOR No. 6643" who is having trouble with the yarn unthreading from the travelers at doffing time. I have had this same trouble and the only thing that I found which stopped the unthreading was to get a smaller circle and a square point traveler. I don't see how either the square point traveler or the round point traveler could wear the ring faster than the other as either one has only one place where it bears on the ring. I have changed over a room from round point to square point travelers without impairing the running of the work. I do suggest that "CONTRIBUTOR No. 6643" try the square point traveler with a smaller circle—he could try several until he found the right one.

CONTRIBUTOR No. 6693

EDITOR COTTON:

I would like to answer the question by "CONTRIBUTOR No. 6643" who is having trouble with his travelers coming unthreaded after the doff. I had this same trouble on different numbers (other than 21½s warp and 24s filling) and changed to a square point traveler. I also made a test after changing over and found that the ends down at doffing on square point travelers per 1,000 spindle hours was 15.1 and on the round point travelers 40.0, so I am still running square point travelers.

In changing from round point to square point travelers it is necessary to use a heavier traveler. It would be a good idea to have the supplying company send several samples of about the number needed and a test could be run to ascertain the best suited traveler for local conditions.

I cannot answer as to which traveler will wear the ring most, but if one has greater production than the other, then new rings could be bought on the profit from the greater production.

CONTRIBUTOR No. 6694

*The original question appeared on page 117 of the May issue of COTTON; another answer appeared on page 131 of the June issue—The Editors.

Why Blame the Overseer?

WHEN THE article entitled "Ideas on Card Settings" came to us and the author, "CONTRIBUTOR No. 6531", used the card settings "tight and loose", the editor said that "CONTRIBUTOR No. 6531" was getting himself into deep water. Surely enough, here is a man that does not agree with him and gives us some pertinent comments. He goes further to state that often when bad conditions prevail in a room that the overseer is not responsible for them because he is unable to get them corrected for reasons over which he has no jurisdiction. This is a thought to bear in mind—before we criticize too severely and before we replace our men.—Asst. Editor.

EDITOR COTTON:

On page 113 of the March 1936 issue of COTTON, "CONTRIBUTOR No. 6531" gives us his ideas on card settings and says that he accepted a job in a mill where he found that the cards were set just any way, that the cylinders and doffers were faced and jammed and that there were different settings at all points, etc. Well, for these to be faced we all know that the wire on the cylinder must have been raised or the flats were set too close; these conditions cause trashy and neppy work at the cards. "CONTRIBUTOR No. 6531" goes on to say that if the overseer had known his business he would never have allowed these conditions to occur in his room.

I do not agree with him for putting all the blame on the overseer. I do not think it is his job to take the gauges away from any grinder and go over the settings of the card. Most overseers have lots of other things to take up their time, which makes it impossible for them to go over cards that the grinder has just set.

In his third paragraph, "CONTRIBUTOR No. 6531" says that they tore the cards down just as if they were going to move them and then he finished up with a list of settings that they used. After the cards were re-set and started up, they produced a good clean web with a 16-grain average flat strip.

Now if the cylinders and doffers were faced as he said they were, I can't see how the re-setting would make such a big improvement as he would have us believe it did. All the re-setting in the world would not make such an improvement.

The first thing he should have done was to check the settings of the cylinder and doffer and flats to make sure that they were clear of each other and to

fix the jams in the doffers. Then the cards should have been cleaned properly and given a good grinding. After this, they should have been re-set and our friend would have secured good, clean, smooth webs from them, providing that they were set accurately.

He gives us a list of the settings which he used. I do not agree with him on this loose and tight method of settings. Take the screen lip to the face of the cylinder setting which he gives as a "loose 10/1000-inch", feed plate "loose 10/1000-inch or tight 12/1000-inch", flat comb "7/1000-inch (not to rub flats)"; I think that the card grinders should be taught to set the cards as accurately as possible—let's forget this loose and tight method of setting; there is nothing accomplished from it.

If the grinder sets to the particular gauge he will not go wrong or will he be worried with any overseer taking the gauges away from him and going over his settings; he will keep them himself and in so doing keep himself and his overseer out of trouble. There are times when the condition of the cards prevents the grinder setting the flats on the cylinder as close as he would like; when the flats are set to a cylinder which is backed under or raised, it is not wise to set too close. The cylinder should be re-drawn as soon as possible. Often the cylinders are not re-drawn and the grinder is instructed to hammer down the fillet and get the raised wire back in place. Seldom will this wire remain down and the grinder must continue to hammer the fillet down at every grinding.

This is not the overseer's or the grinder's fault because both know what should be done but they must wait for permission from the office before a man from a card clothing company can be secured to do this work.

It is difficult sometimes to convince officials what should be done and then often they themselves cannot authorize the work or the company cannot stand the expense—so let's check up before we put all the blame on the overseer for bad card settings and for other bad work in the mill.

CONTRIBUTOR No. 6678

"Cotton's" Clearing House

ANOTHER example of the service that a magazine like COTTON affords its readers is shown by a question which we received from a correspondent who asked, "What causes the ends on a roving frame running 16-hank roving to run slack and jump out of the flyers after the bobbin is one-quarter full? The tension was proper at the beginning of the doff (when the frame was started)."

We passed this question along to Fay H. Martin,* who is an authority on roving frames and who has been a contributor to COTTON for a number of years; he replied as follows:

For making 16-hank roving the frame should be equipped with 6x2½-inch flyers, thoroughly balanced with all of the pressers perfectly free to revolve around the tube leg of the flyer, and the pads in proper adjustment. The slot in the tube leg should be closed to a gauge that is .005-inch in thickness. The edges of this slot should be very smooth and well polished, the work being done by an experienced flyer maker.

Twist: Twist is governed by the stock being used and by the conditions at the mill. There should be enough twist to ensure the roving running off the bobbin in the spinning creel without stretching or breaking. When tested on a roving tester it should write a chart above the 6 line with an average on the 7 or 8 line.

Lay: "Lay per inch" lengthwise of the bobbin should be open enough so that the wood can be seen at all points. Avoid crowding the lays. Let each lay be distinct and separate but not too open. Lay is a *very important* factor for good tension on a roving frame.

Tension: After the twist and lay have been established the tension becomes almost automatic. However, it cannot be figured but is arrived at by the trial and error method. If a chart of a full length bobbin will not follow an average line as determined by the twist, the frame has cone trouble, which can be overcome by having a new outline turned on the bottom cone.

If the foregoing is followed closely, the ends should not fly out of the tube leg.

In the same letter from the correspondent he asked another question as follows: "I notice on a few card flats that the wires have become deflected or crossed, possibly due to faulty setting of the flat stripping apparatus, which is a combination of wire and bristle. Is there any way of getting these wires back in place again?"

One of our friends answered this by saying "I cannot suggest any satisfactory method of putting deflected or crossed wires back again to their original pitch.

"A prevention of further trouble along this line, however, could, in my opinion, be obtained if the wire stripping fillet were eliminated from the spiral stripping brush.

"The continuous action of the wire stripper fillet against the card flat wires, which is the case in question, is injurious to the card flat wires. This is because the spiral brush is a combination of wire and bristle. Also, the points of the card flat wire are kept dull because of the continuous action of wire against wire."

COTTON is always glad to receive questions on any mill subjects from its readers, and will in turn pass them along to its friends for information, without revealing the source of the question. Then the answer to the question is sent to the asker immediately, prior to publication. Submit your practical questions through us as the clearing house.

*Mr. Martin has written a series of articles which appeared in COTTON from time to time. A dozen of them are available in "The Roving Frame", which may be secured from COTTON'S book department for the price of one dollar.

"No, sir! I won't change a single word!"

HE suddenly launched a bitter attack on his competitors.

He hinted at unfair practices...implied that all his rivals were selling inferior goods. And he blared forth these insinuations in full-page newspaper ads.

The National Better Business Bureau pointed out that the type of advertising he was doing was harmful to the entire industry...tried to persuade him to change his copy.

"No, sir!" he shouted angrily, "I won't change a single word of it!"

"Mind your own business!"

He said he'd thank us to mind our own business. He knew what he was doing...and hadn't his products been a big success?

"Of course they have," we admitted, "and will you please take a slip of paper and write down the reasons why your products have been so successful?"

Grudgingly he wrote: "*Quality—Purity—Price—Service.*"

"That's funny," we said, "you don't say a thing about attacks on competition! Yet your last full-page newspaper ad used a quarter of its space to talk about how bad your competitors are. Maybe you are spending 25% of your advertising money to stress a point that doesn't matter!" He promised to think it over.

Apparently he did think it over...for the attacks stopped almost at once. And he hasn't printed a single word of knocking copy since.

• • •

Corrections of misleading or unethical advertising are made by the National Better Business Bureau at the average rate of more than one a day.

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Overhead Cleaner Helps Prevent Gouts

EDITOR COTTON:

"CONTRIBUTOR NO. 6617" requested some information on page 153 of the February issue of COTTON concerning the method of cleaning in the spinning room to prevent gouts in the yarn, and also asked for help on the proper setting of the snick plates on the Barber-Colman spooler to remove gouts. I will not offer anything on the setting of the snick plates because several men have covered this subject on page 129 of the June issue.

However, with the overhead cleaning system "CONTRIBUTOR NO. 6617" can keep the lint from accumulating, because the cleaner, or blower, will keep the back and front guides and the creels from being coated with lint which will get in the yarn, and, at the same time, he can give his spinners more sides because the cleaner helps to do their cleaning and also makes the work run better.

If the contributor is having as much as 60 per cent of his loom stoppage due to gouts, it will pay him to look into this overhead cleaning system, for I feel sure that it will help him to increase production in both the weaving and the spooling. This system is quite expensive, but, on the other hand, it will help to stop the gouts that cannot be gotten rid of otherwise.

CONTRIBUTOR NO. 6688

Experience on High-Draft Roving Frame

Editor's Note: Discussions such as the following are of immeasurable benefit to other mill men. Wherever there is a gathering of cotton mill men the subject of long draft roving is liable to arise. So if you have discovered something new about processing, let us use it in this department —for the good of all. Or if you have a question, we will publish it.

EDITOR COTTON:

We have recently installed one of the high-draft roving machines in our card room, and I wish to submit this report to our readers as to its advantages and few disadvantages. I am not recommending the machine to you; I am just reporting on the operation and production of the machine from trial operations in our plant.

First, the operation of the machine is a less labor load upon the operator, especially in creeling in the stock of the preceding process. We have less doffs per 8 hours per man. In creeling it reduces end piecing, thus reducing thick and thin places in the roving, which on our present frames of 102 spindles requires exactly 204 ends to be pieced in the creel, whereas a frame of 102 spindles of the high-draft type would require only 102 ends to be pieced up, or one end to every spindle.

The cleaning on this new frame is done similar to our regular cleaning on the present type of frames. However, the bottom clearers will have to be cleaned on the half full bobbin because linters form clearer waste very fast on the bottom clearers due to the speed of the front rolls. This cleaning is done on our present machine but the clearers are much easier to reach. The back rollers do not turn so fast; therefore clearer waste accumulates very slowly, eliminating the cleaning of the back clearer at the half doff. The new frame does not accumulate as much linters on the back of the frame as our present type because we have sliver in the back in cans instead of roving in the creel. A creel of cans will run around 40 hours, thus reducing creeling time. The frame will run a doff in around two hours.

On this sample frame we are producing 2.50 hank roving, 14.40 pounds per spindle.

From our roving test I find the roving runs very evenly; however it will run more evenly if the humidity does not reach over 55 per cent. If the humidity is high the frame runs fine; however, if this roving is run on the roving tester I find that it is soft and uneven. I have noticed that we have very few ends to come down while the frame is running, thereby giving us more even work.

We think the only disadvantage of the frame is cleaning the back bottom clearers. The operator has to squat under the wooden creel roll to clean them as the space between the rolls and the roller beam is low and will not easily permit the hand to reach through from the front. This type of frame will require a lot of cans. However this is no disadvantage as the creels will be kept much cleaner and this will eliminate much extra cleaning that we have to do now.

I think this frame has a lot of advantages, some of which are less labor cost, less white waste or waste to be re-worked, requires less lubrication, better quality of yarn, less handling of raw stock, and a reduction in power consumption. This frame will make even roving provided our laps are even and of a regular weight. We will have to maintain regular weights throughout our cards and drawings, so as to produce a regular weight sliver for the machine. This is important because we have no doubling in the creel as on our present intermediates. If the drawing sliver is even in weight, i.e., yard to yard, this machine will produce an even hank roving.

This machine is neatly and substantially constructed, having steel casing covers instead of wood. The main bearings, in fact all principal bearings are lubricated by the high-pressure method, thus eliminating the conventional type of oil hole method which is open for dirt and lint accumulation, and of course this does not give the most satisfactory lubrication.

In conclusion, I may say that the roving is creeled in the spinning room two ends per spindle, and of course this will produce more even yarn; therefore, this will improve the quality of the finished goods. I may say also that the breaking strength per skein is about the same as yarn made from a 1.45 hank roving, one end in the creel. However, this is governed mostly by the length of staple and grade of cotton used in the manufacturing process.

CONTRIBUTOR NO. 6667

KETTLE COST SAVINGS

of 25% to 75% with

Houghton's WARP SIZES

Without exception, wherever Houghton's new cotton warp sizes have been tested, sizing costs have been reduced from 25% to 75%. Consider what this can mean!

And, further, an increase in weave-room production—as much as 3%—is reported, because these sizes make warps stronger, reduce shedding or sticking to cylinders, permit the yarn to split freely as it passes over the lease bar.

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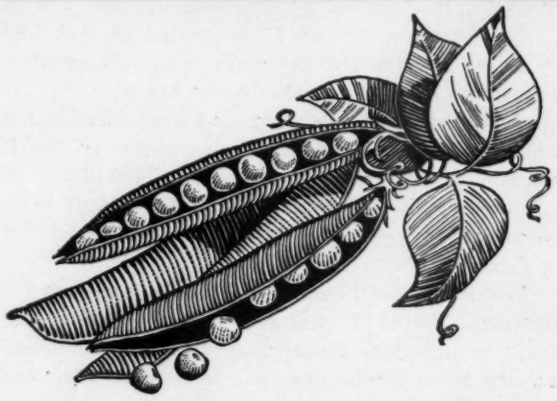

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One of the paramount features of our aprons is UNIFORMITY. Efficiency depends upon the precision in which draft aprons are made.

These aprons will not vary more than 5/1000 of an inch at any spot. Furthermore, each apron is uniform in thickness and exact size with all others in the same shipment, and uniform with previous shipments! They look alike—perform alike—are alike—like peas in a pod.

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Our aprons are made of the very finest of Bark tanned leather or chrome leather and properly beveled to insure a sure fit when applied. Rough finish inside to grip; smooth finish outside for an even flow of the yarn.

Keep a supply of "spares" on hand for that emergency. When we know the exact type and size you use, we can fill your orders without delay.

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Better Send for Samples!

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Give these aprons a trial at our expense and see for yourself how superior they are and figure how much money you can save. *Write for free samples,* telling us the type of spinning machinery you use. If your requirements are other than our regular sizes in stock, we can make them to specification or sample. Get a supply today.

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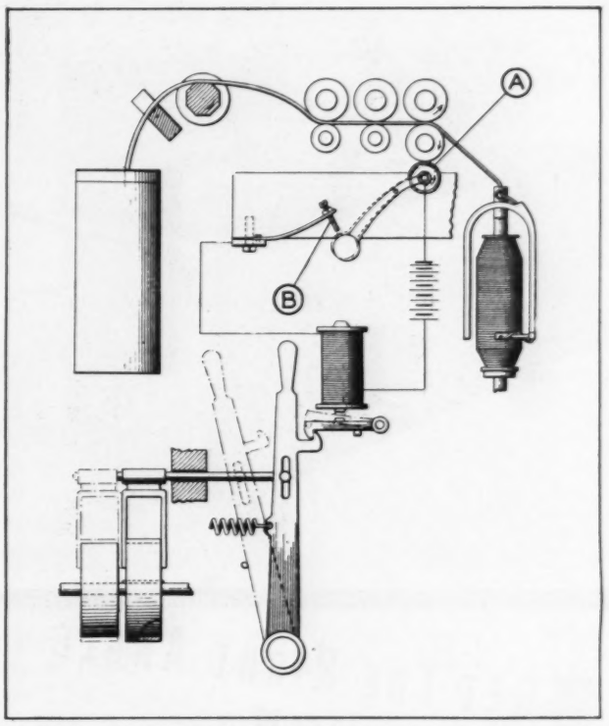
Electrical Stop Motion for Roving Frames

AN ELECTRICAL STOP MOTION for roving frames has been invented by Early B. Jones of the Bibb Manufacturing Company, Columbus, Ga. The stop motion operates by a break in the roving without imposing any strain upon the roving or resistance to its movement through the machine. When a strand of roving breaks, the machine is stopped, and a signal light on the end of the frame is automatically lighted to attract the attention of the operator.

The principle of the stop motion will be seen in the accompanying sketch. It will be noted that a scavenger roll, *A*, similar to that used regularly on a spinning frame, is added underneath the front bottom roller on the roving frame; it is connected in the conventional manner to a pivoted lever which is of electrically conductive material.

When a break occurs in the roving, the loose end wrapping around the front bottom roller or around the scavenger roll causes the opposite end of the lever to contact a contact pin, *B*, located on the end of the piece of spring steel, which operates the disconnect switch, stopping the machine and lighting the signal bulb on the end of the frame. This solenoid switch functions in the same manner as does the solenoid switch in the electrical stop motion on drawing frames and combers.

The sketch shows the stop motion applied to a conventional 3-roll drafting system, but it is also applicable to the newer types of long draft roving frames. The advantages of a satisfactory stop motion for roving frames are evidenced, in less waste, better production, increased work assignment and consequently increased earning power of operatives. Such a device is especially applicable in the case of long draft roving where the reduction in creeling affords greater opportunity for increased work assignments.



Cross-section of new electrical stop motion for roving frames. This is shown on a conventional three-roll frame, but it is applicable as well to the newer types. A substantial installation has been made in the Bibb mill at Columbus, and trial installations have been made in a number of other plants . .

Mr. Jones, the inventor, has assigned the patent, No. 2084810, to the Bibb Manufacturing Company of Macon, Ga.

Answers "Wash's" Questions

EDITOR COTTON:

So "WASH" has decided that contributors number "6570", "6569", and "6575" are one and the same. You are correct, "WASH".

You say that you have already admitted that you were wrong for once in over 20 years. Now I am not that good for I have been wrong many times in trying out my ideas; also, I have found myself to be wrong at times in trying out the ideas of others.

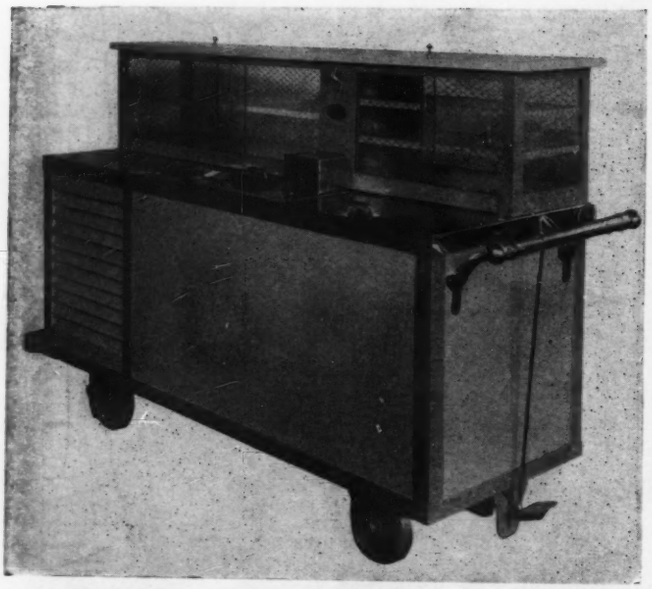
Before I try to answer the questions* you say will make everyone so much wiser, I wish to state that all my experience has been practical experience, if practical experience means working in the mill, digging the things out for yourself as they come up from time to time. Thus, if you prove anyone wrong it will not be a textile graduate; I only attended school until I passed the tenth grade. The first overseeing job I was placed on I did not even know the rule of three, or should I say how to use this rule in order to figure a change. It did not take me long to learn, however. I have now been cotton milling for 27 years and I still do not know it all because I learn something new every once in awhile.

Now to try and answer the questions "WASH" has given:

1. *Referring to any differential, what is meant when we state "the additional compounded speed or additional impetus caused from the cone"?* This is the excess speed which is imparted to the bobbin over and above that of the spindle, also above that imparted by the jack shaft through the compound. This excess speed is changeable at each change of the frame through the movement of the cone belt to a different position on the cones in order to wind the stock delivered by the front roll onto the bobbin at a uniform rate of speed while the bobbin is increasing in diameter at each change of the frame.

2. *Why is the Holdsworth compound a more simple proposition regarding the cones than a compound wherein there is a differential or difference in speed between the spindle and the bobbin?* If I figure it out correctly, on a Woonsocket frame, vertical shaft type, jack shaft making 446 r.p.m., the spindles will make 1370 r.p.m.; the bobbin driver or plate gear will

*These questions by "WASH" appeared on page 90 of the July issue of COTTON.—The Editors.



GET THE RIGHT ANGLE ON "REFRESHMENT TIME"

The modern textile mill is discarding many obsolete practices, one of which is their perspective on the question of refreshments for employees. The old "Bug-a-boo" has been turned into an ally, for scientific tests have proven that the extra light meals and refreshing drinks increase the worker's efficiency at least 14%.

Get the right angle on this important question. Save the lost time strolling back and forth to remotely placed concession stands by supplying their refreshments RIGHT AT THEIR MACHINES.

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WRIGHT also has a specialized industrial feeding service, including supervision of cafeterias, lunch rooms, stationary and portable canteens, etc. May we tell you about it and give you further details on the WRIGHT CARTS? Drop us a line today.

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make 400 r.p.m. with the bottom cone raised, which will drive the bobbin 1373 r.p.m.

If I am right, then the cones will have to be modified or their hyperbola curves so made. Also, their starting diameters will have to be constructed to lessen this excess speed which is above that of the spindles, as well as modified to the excess speed which is required to wind the stock delivered by the front roll, in order not to stretch the stock and break the ends down when the frame is in operation with the bottom cone lowered. The Holdsworth compound is made so that the spindle and bobbin speeds are equal when the bottom cone is raised; the cones are therefore modified to the delivery of the front roll only. Of course, the speed of the frame and the type of flyers are to be considered on both the old and new type compound or differential. I am only stating their differences as I see them.

3. Can the same cones be used on both the Holdsworth and any new differential? If not, why? The same cones cannot be used on both the Holdsworth and the new differential. The same reasoning which is given in the answer to question No. 2 applies. In addition or a further reasoning of the same, there is a lagging behind of the plate gear (this being the Daly differential). The jack shaft makes 1.115 revolutions to each revolution of the plate gear. This difference in speed is partially taken care of by the gearing between this gear and the bobbin shaft. If I have figured correctly, there is a difference of speed between the jack shaft and this plate gear of 46 r.p.m. while the cone is raised. When it reaches the bobbin and spindle there is only a difference of 3 r.p.m., or to be accurate as to the figures I arrived at, it is 3.25 r.p.m. The speed of the spindles actually figures 1369.85 r.p.m. while the bobbin figures 1373.10 r.p.m.

4. When the cones are modified for any differential motion, should more factors be considered than with the Holdsworth motion? What are the factors? When the cones are modified for a differential motion, the excess speed of the bobbin over the spindle is not derived or imparted from the cones. This excess must be taken care of in the diameters and outlines of the cones.

5. Which type gives us the most simple and sure foundation of a pair of cones, the Holdsworth motion or any differential? Please explain fully. The Holdsworth motion gives the more simple outline to the cones in that they do not have to be modified for the excess speed not derived from the cones as explained in the answers to questions Nos. 2 and 4.

As I am not a designer of textile machinery I cannot say I am positive the answers to these questions are correct. They are just my ideas. "WASH", the questions you asked certainly sound like a textile school as they ask you the same question in so many different ways and the answers have to be an almost exact repetition of the answer to some former question that one has to be careful not to cross one's self.

Now don't come back and say I forgot to state about the flyers and the speed of the machine; I did remember and this article applies to both types of compounds.

CONTRIBUTOR NO. 6684

An Old-Timer Says—

(Continued from page 101)

we were making in the yarn mill and I got so dadjimmed mad I wanted to quit?

No, I don't believe I quite remember, JIM, *unless you refer to that time I told you to double the roving and double the draft on the 8s we were making and you said the draft gears on the spinning frame could not be made to take such a long draft; there wouldn't be any draft gear left.*

Yeah, I thought I had you that time, but you sent for the master mechanic and had him to make a new stand and change all the gears so we could double the draft (about 18) and still have a draft gear big enough to change a tooth or two to keep our weights correct. Well, I sure was mad. The idea of doubling the draft on low grade roving making 8s yarn which already had too long a draft for single—well, I just knew you were losing your mind, or something.

Of course I remember, JIM, *and I also remember about you coming to me about two months later to complain that the master mechanic would not fix up the 20 frames we had on 8s yarn fast enough so you could get them all on.*

Well, to think back, OLD-TIMER, we have done some things that we all thought at the time were very foolish, and then found out by trying them out that what we *thought* was entirely wrong, and that is why I am so proud of my laboratory mill. All the help in the mill have learned that the stock from these machines must be kept separate all the time, even if we are not making a test of any kind, and it is so easy to put on a test when you want to find out something. For example, this young smart-alec, my assistant, says to me, "I *believe* we could double that 2.00-hank single we are making 30s out of and also double the spinning top roll weights and it might give us a more even yarn and at the same time be easier to keep the numbers better." Get that, OLD-TIMER? He *believes* so-and-so.

Well, I don't give a tinker's dam what he, or anyone else, *believes* any more; all I have to do is to let my laboratory mill prove which is best; that will take the starch out of some of these fellows who *think* they have got such wonderful ideas about manufacturing.

Well, JIM, *I think you have got something there. So long, I'll be seeing you on the merry-go-round.*

So long, OLD-TIMER.

I want to live a long time so I don't turn on a switch without first making sure that all is clear.

I want to live a long time so I don't stand on a barrel or a weak box in the supply room when reaching for material and spare parts.

I want to live a long time so I don't put too much oil on my frames so it will drip on the floor where I will later slip on it.

I want to live a long time so I stand to one side when putting a belt on a pulley.

I want to see a long time so I use goggles at the emery wheel.

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Continued from Page 113

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152. Plant Checkup List—Crane Co., 836 South Michigan Ave., Chicago, Ill.

154. Johnson Bronze Bulletin No. 340—showing over 600 sizes Johnson general purpose bronze bushings. Johnson Bronze Co., New Castle, Pa.

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163. Roto-Koner—Bulletin describing the new No. 44 Universal Winder, known as the Roto-Koner for winding knitting yarns, which has many new and distinctive features. Universal Winding Company, 95 South St., Boston, Mass.

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166. Precision Winding.—An interesting 30 page booklet on rayon yarns and winding, designed for weaving and knitting mills using silk and rayon. Universal Winding Co., 95 South St., Boston, Mass.

168. The Tube-Tex for Tubular Knit Goods—Bulletin describing this modern machine which extracts, processes, dries, conditions and folds in one continuous operation, lowering costs, saving labor, power, space and waste. H. W. Butterworth & Sons Co., York and Cedar Sts., Philadelphia, Pa.

170. Gates Textile Accessories—showing the increased efficiency and economy to be secured through the use of Gates cone belts, evener belts, card bands and loom binder cushions. The Gates Rubber Company, Denver, Colo.

171. Design of V-Belt Drives—48 page booklet full of valuable tables and data showing the type, number and design of V-Belts that will give the greatest efficiency on each particular drive. The Gates Rubber Company, Denver, Colorado.

176. Sonoco Products—A 60 page illustrated booklet giving descriptions, specifications and charts of the many Sonoco products, including: bobbins, cones, tubes, cork cots, roving cans, spools, rolls, etc. Sonoco Products Co., Hartsville, S. C.

177. New Advances in Loom Equipment—12-page booklet describing discoveries and advances which loom manufacturers have made in keeping pace with these discoveries down to the present time—non-technical information, amply illustrated. Emmons Loom Harness Co., Lawrence, Mass.

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183. Schieren-izing—describing leather belt manufacture from the selection of hides through the various processes to the final tests, also showing illustrations of belts with unusually long service lives. Chas. A. Schieren Co., 31 Ferry St., New York, New York.

184. Speed Control Handbook T-35—new reference book on variable speed control, said to be the most complete and helpful book on this subject ever published, 112 pages and more than 200 illustrations of interest to every production executive, purchasing agent, superintendent, overseer and master mechanic. Reeves Pulley Co., Columbus, Ind.

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186. F-7 Feeder Bulletin — Describing the better blending that is secured and the important cleaning operation that is added by using F-7 feeders in place of bale breakers. Saco-Lowell Shops, 147 Milk St., Boston, Mass.

187. The Wildman Single Head Full-Fashioned Hosiery Machine—Literature on request from the Wildman Mfg. Co., Full Fashioned Division, Norristown, Pa.

188. Form 374—This form enables you to gather your own cost data on your sewing machines and determine whether new Union Special Machines will show big savings. Furnished free by Union Special Machine Co., 400 No. Franklin St., Chicago, Ill.

190. Warp Conditioning Units for Synthetic Yarn Slasher—booklet giving full details will be sent free to mill men who write on their company letterhead. Chas. B. Johnson Co., Paterson, N. J.

191. The Bahnson Humiduct—bulletin describing Bahnson Humiduct system which combines humidifying, heating, ventilating and air conditioning all in one unit, will be sent free on request. The Bahnson Co., Winston-Salem, N. C.

192. Wood Tanks for Every Purpose—100 page illustrated catalog showing the advantages and lasting qualities of wooden tanks. Rubber-lined tanks for dyeing and other uses in the mill are illustrated and discussed in detail. Hauser-Stander Tank Co., Ammen Ave. and Spring Grove Ave., Cincinnati, Ohio.

197. Extra Life for Chain Link Fence—A folder telling about Bethanized Wire and explaining its advantages for mill and factory protection. Anchor Post Fence Co., Eastern Ave. and Kane St., Baltimore, Md.

198. The Perfect Loom Let-Off—Folder pointing out the advantages of the new asbestos friction loom let-off and giving specifications and price list. Fiber Mfg. Co., Newton, N. C.

COTTON, Grant Bldg., Atlanta, Ga.

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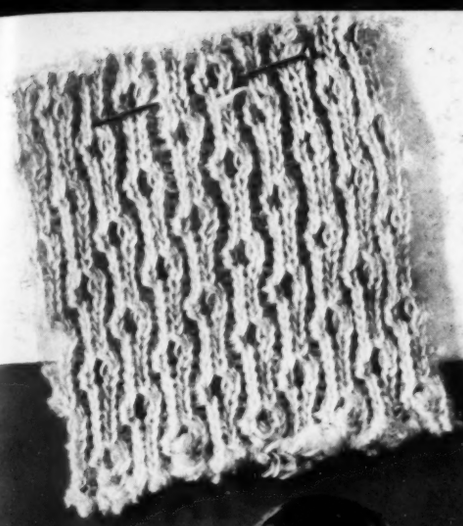

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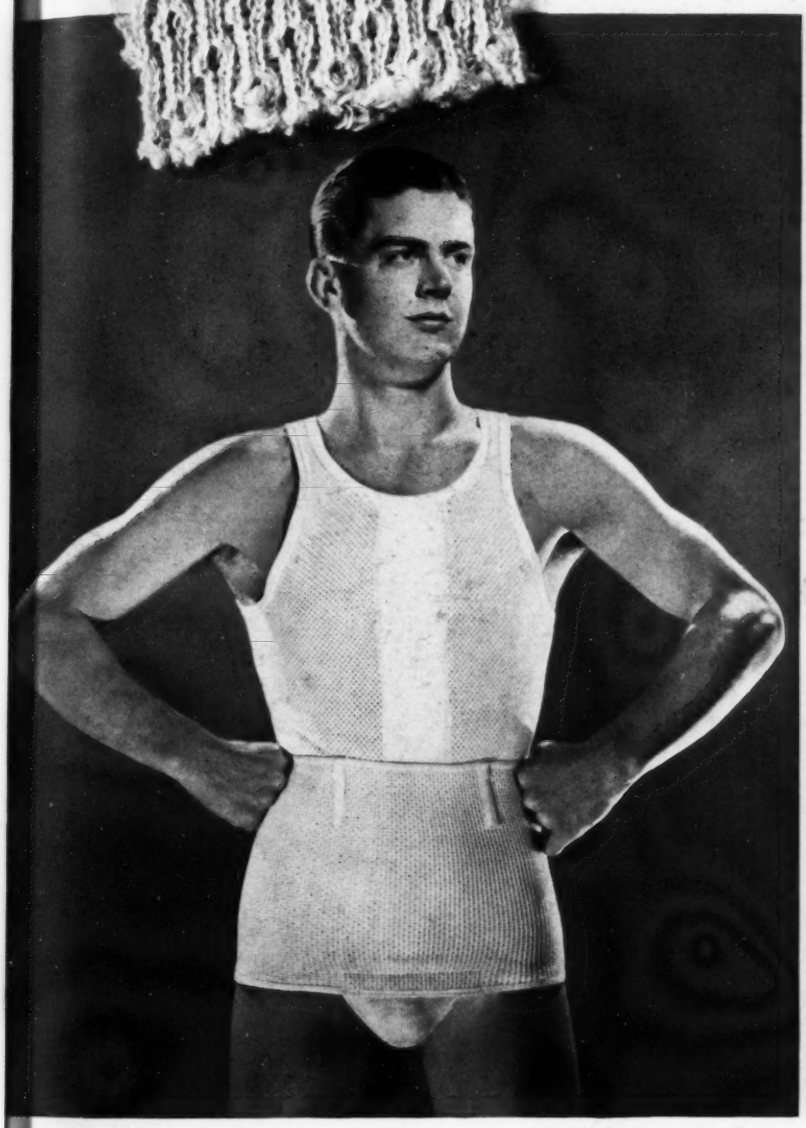

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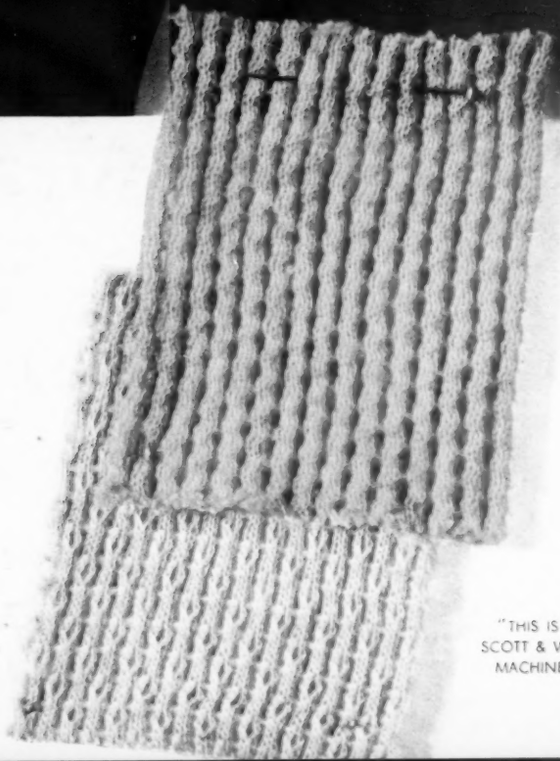

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KNITTING SECTION

The Maintenance and Fixing of

Full-Fashioned Hosiery Machines

This is the second article of a series on full-fashioned machine maintenance, being prepared especially for COTTON by a man who is recognized as a competent mill man. The first installment appeared in the July 1937 issue and covered the vertical motion of the needles. This article deals with the horizontal motion of the needles, the function of the regulator, etc. Retain your copies of the magazine so that you will have the entire series complete.—The Editors.

By Arthur J. Cobert

IN THIS, the second article on full-fashioned fixing, we will discuss the horizontal motion of the needles. This includes the press motion, regulator motion, rocker and loose course motions.

The horizontal motion of the needles in relation to the working part of the stitch is controlled by the presser cams. These cams govern the amount of pressure that is required to close the needle beards sufficiently to slip the loops over the needles in the formation of the stitch. They also control the needles in their movement of following the sinkers and dividers and in aiding the knock over motion.

In gauging the needle position for press these important factors must be kept in mind; the amount of pressure at the presser edge, the angle or pitch of the needles, the position of the needles at all times in relation to the sinkers and the narrowing points.

Proper Angle or Pitch of Needles

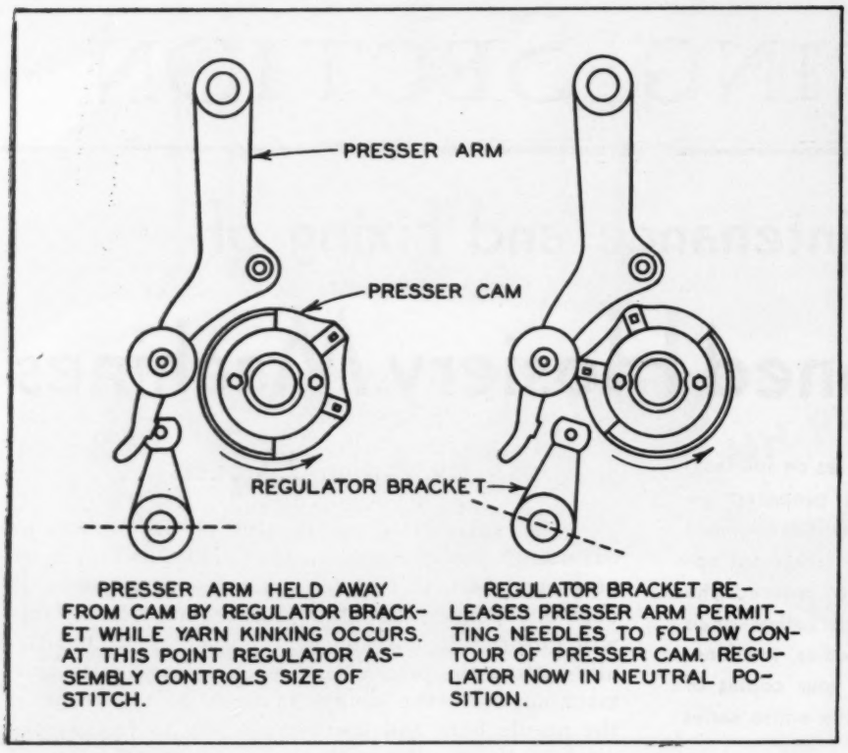
Unless the needles have the proper angle or pitch when passing through the working motion or when making a narrowing, poor performance of the needles will result. Not only the amount of pressure on the narrowing points is important, but also the angle at which the needles meet the points. The needles must meet them in such a way that when the greatest amount of pressure is applied, both fit perfectly together to permit the stitches to slip on and off the needles without breaking any of the fibers in the yarn. On most types of machines this pitch is practically set at the factory and is controlled by the length of the needle bar arms, between the needle bar shaft and the hinges on which the bars pivot or swing.

It is evident that moving the needle bars in or out will change the pitch of the needles as they must necessarily travel through an arc, but as there is only one point where the pressure is correct, this will govern the position of the needles, automatically setting the proper pitch. These particular type machines have the hinges fastened to the front of the needle bars and there is no way to change the pitch of the needles with the exception of a limited amount of filing of the hinges—enough to bring the needle bar parallel with the sinker heads. There are some machines constructed with the hinges on the bottom of the needle bars and built with oversize holes to permit setting the bars in or out without affecting the pitch. This is by far the most desirable principle.

Determining the Amount of Press

The correct amount of press that a given needle bar should have can only be determined in two ways. One is by the use of proper gauges made for that purpose and the other is by feel or sense of touch when the highest point of press is reached. This requires a great deal of practice to ascertain the correct pressure required by this method. A novice may become accustomed to determining the correct amount of press by trying several that are in good running order and then judging for himself accordingly. This is accomplished by putting the machine in the position of greatest press, when the presser rollers are on the highest point of the cams and the needle beards closed tightly. By lifting one of the needle bar levers slightly, enough to release the pressure from the needles, and returning it to its original position, the amount of pressure can be determined.

After a great deal of practice the seasoned fixer can tell instantly when enough pressure is being applied for perfect performance without excessive wear on the needles or presser edge. A new machine will require less pressure than an old one for satisfactory service because the presser edges on the sinker heads are not worn and the needle beards are in good condition. As a machine grows older more press is needed. Grooves appear in the presser edge that prevent proper closing of the beards and many



PRESSER ARM HELD AWAY FROM CAM BY REGULATOR BRACKET WHILE YARN KINKING OCCURS. AT THIS POINT REGULATOR ASSEMBLY CONTROLS SIZE OF STITCH.

REGULATOR BRACKET RELEASES PRESSER ARM PERMITTING NEEDLES TO FOLLOW CONTOUR OF PRESSER CAM. REGULATOR NOW IN NEUTRAL POSITION.

of the beards are worn flat from constant closing.

Uniformity of Press

The importance of uniformity of press is readily understood but not always adhered to. So much depends upon the position of the needles in relation to the catch bar in order to produce good fabric. Inasmuch as the needles have two distinct settings, one for stitch size and the other controlling pressure and needle distance with sinkers, it is very easy to confuse the two in making adjustments. For example, if a needle bar is moved in to loosen a section, by the adjustment screw directly on the arm, the entire motion of that bar is altered which may affect its performance to the extent that poor knitting will result.

To align needle bars for press uniformity commence in the following manner:

Remove the half round of the regulator cam which permits the shaft to move in sufficiently to allow the press rollers to contact with the half rounds of the presser cams. To do this it is not necessary to remove the spring which holds the regulator roller against the cam. Simply stop the machine in such a manner that the regulator roller is riding on the working cam and after removing the half round, turn the machine until the roller falls into the space occupied by the half round. Do this slowly. The press rollers will then make contact with the presser half round cams, unless there is some other obstruction such as rockers, loose course cams, etc. Naturally all these must be in the off position.

Next, remove all presser arm springs and level out the rollers by turning each one against the half round of the press cams and making the adjustments by feel or sense of touch. Each roller should have the same amount of pressure with the springs removed. Now replace all presser arm springs. If the needle bars in question are merely to be re-aligned to insure press uniformity, an adjustable table gauge is now set to the average needle bar, that is, striking an average by re-setting the gauge several times to the needles on various bars. Then start with number one bar and align the needles to the gauge, using the adjustment screws directly on the needle bar handle where it joins the needle bar arm, until all the bars have been adjusted in this manner. Set the table gauge so that the point will strike the needles slightly below the edge of the beards and only rubbing the needles enough to show that it is making contact.

Double Needle Bars

In using the table gauge to align needle bars it will often be noted that one side of the bar is not parallel with the other side. As this adjustment is quite complicated we will first discuss double needle bars as they are still by far the majority in use. There are also two types of these as before stated. To align the one having the hinge mounted on the front of the bar, it is necessary to remove one of the hinges and file it until the gauge shows that both sides of the bar are parallel. This applies to new machines only. It is not advisable to file the hinges on a re-built or used machine as will be explained. It is taken for granted that when the machine in question was first erected, the needle bar hinges were fitted perfectly. Upon re-needling these particular bars, oftentimes the new needles will be in a different position than originally, throwing one side out of alignment. Now, if the hinges are again filed, too much may be removed changing, the pitch of the needles. Also, if the same bars are later re-needled, which is often the case these days, more filing will result. It is suggested that packing the hinges with paper rather than filing on a needled job is advisable. Upon a second re-needling, the paper can be first removed and the bars re-aligned without any filing. If the bars to be aligned contain old needles, care must be exercised to determine whether or not the needles themselves are at fault. This is often the case from continued plliering of same. Nothing but re-pliering of the needles is satisfactory.

The same hinge can be filed to move the bar either closer or farther away from the sinker head as desired. If a hinge is filed below the screw holes it will draw that side of the bar closer to the sinker head. If it is filed above the screw holes it will draw the bar away from the sinker head. In packing with paper the opposite holds true as paper adds to the thickness of the hinge rather than removing it as in the case of filing.

On single section needle bars of this type, closer adjustment is obtainable, which is quite obvious, as each side of the individual section may be made parallel.

Machines that are fitted with the hinges of the needle bars mounted on the bottom, no filing or packing is necessary as the needed adjustments can be made by simply opening the hinge bolts and moving the bar in the desired direction.

Different on New Machines

Aligning needle bars on a new machine requires an entirely different procedure from one previously erected. There are many different types of press gauges but only two of the most commonly used will be discussed. On some machines employing the hinge on the front of the needle bar, a small standard thickness gauge is used between the needle shank and the presser edge. With the machine in the proper position for aligning needle bars as previously explained, a small standard block is inserted between the press rollers and the cams. This brings the needles in the proper position for gauging the press. The standard thickness gauge is then placed between the needle shanks and the presser edge and the necessary adjustments are then made to give the proper needle distance. The adjustable needle gauge is now used to attain a closer setting.

On the other type of needle bars where the hinges are mounted on the bottom, a standard block is also used between the press rollers and the half round of the cams, the difference being in the table gauge. Here 3 standard table gauges are employed. One gauge is used for the shank of the needles close to the plate, the second for the center of the needle shank, and the third for the top of the needles. With this method the proper pitch of the needles can be obtained accurately. When the needles conform with all 3 gauges, the correct pitch is assured.

After all the needle bars have been aligned, replace the half round of the regulator cam. This brings the press rollers away from the cams. In this position the regulator brackets are holding the presser arms leaving the rollers neutral. Now reset the adjustable table gauge for the average of the needle bars and re-align them by means of the set screws located on the regulator brackets. This last adjustment will produce a uniform size stitch over the entire machine. Do not make any more adjustments directly on the needle bar arms at present.

Function of Regulator

The size of the stitches is controlled by the position of the needles in relation to the throat of the sinkers when the thread is being carried around the needles. If the sinkers move but a short distance past the shank of the needles, a short or small loop will result. If the needles are moved in towards the presser edge, which brings the sinker throats a greater distance past the needle shanks, a larger stitch will be made. The slacker provides this adjustment of the needles, moving them in or out as the occasion requires throughout the knitting process.

Some provision must be made to keep the needles from being affected by this change in position while the working motion of the needles is in progress. It is evident they must always follow a true line or motion regardless of the size of the stitch. This is the function of the regulator shaft. By means of this shaft it will be noted that the press cam rollers come in contact with the cams only when the working motion of the needles commences. During the running motion of the sinkers, the press rollers are held away from the cams by brackets extending from the regulator shaft. As the slacker is adjusted the brackets move the presser arms away or closer to the cams as the case may be. This movement in turn actuates the needles as before stated. When the needles start their downward movement at the end of the slur bar stroke, the regulator brackets hold the presser arms and rollers away from the cams until a point is reached on the press cams sufficiently high enough to release the regulator brackets without causing any backward movement of the needles. This is to prevent the partial loops or kinks around the needles from becoming loose or distorted. As the press rollers make contact with the cams, the regulator brackets swing out of action permitting the rollers to follow the contour of the cams without interference of the brackets. This insures a uniform amount of press regardless of the position of the slacker. In other words, during this part of the motion, the regulator is neutral and changing the slacker does not affect the needles in any way.

After the working motion of the needles is completed and they start to come up again, a point is reached where the regulator swings back into action again. The brackets make contact with the presser arms taking the rollers away from the cams to a point where the needles will be in the correct position for stitch size on the following course. This rule now follows:

The size of the stitch is affected by moving the needles in or out with the slacker. This does not affect the amount of press. Changing the amount of press by means of the adjustment on the press rollers does not affect the size of the stitch. On the other hand, moving the needle bars in or out with the set screws directly on the needle bar arms will affect both the size of the stitch and amount of press simultaneously.

Function of Loose Course Cams and Rockers

The loose course is merely an enlarged row of stitches produced by actuating the regulator shaft sufficiently to make a much larger loop than normally made. By shifting a roller mounted on a bracket on the regulator shaft to a cam for that purpose, the needles are moved in past the throat of the sinkers much farther than in making an ordinary loop. Adjustment of the loose course is controlled by moving the loose course roller in or out as desired. In setting loose course cams no gauge is required. Simply adjust in such a manner so there is no backward movement of the needles or loosening

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of the loops when the needles start downward. If this occurs, drop stitches will result. On the other hand, if the roller remains on the cam too long, the catch bar will be thrown off, due to the added pressure of the needles against the sinkers.

The rockers play an important part in the production of the stocking fabric wherever the fabric is reinforced intermittently in the same row of loops. While the regulator controls the size of the stitches in the single fabric, some provision must be made to take care of the added weight when two or more threads are inserted in the same course. The addition of an extra thread produces a much tighter stitch and over a series of courses that part which is reinforced would knit much shorter than the balance of the fabric. The rockers are similar to loose course cams in movement and actuate the regulator shaft at the precise moment that the reinforcement enters the needles, enlarging the loops for the duration of the reinforcement, and allowing the needles to drop back to their normal position when the reinforcement is completed. The amount of rocker depends upon the weight of the added yarn and the size of the normal stitch.

As there are many different types of rockers in use, no definite rules can be given for their adjustment. Rocker rollers may be adjusted uniformly by setting the regulator a given number of nicks looser than the normal loop and adjusting the rocker rollers by feel against the cams. It is desirable to set the cams so the rollers drop off when the last stitch of the reinforcement is completed. On approaching the reinforcement, set the cams so the rollers make contact about two needles early as this much time is required for the needles to move in sufficiently to enlarge the first loop of the reinforcement. Rockers dropping off late or contacting too early produce enlarged and distorted loops in the single fabric. Rockers dropping early and contacting late produce a tight line in the selvage of the reinforcement. Correct coulier timing is important to the proper operation of the rockers which will be discussed in a later article.

In summarizing the horizontal motion of the needles, it is well to remember the importance of proper needle distance. Needles setting too close to the sinkers produce excessive wear of the presser edge and the needles, distorts fabric and produces poor narrowing performance. Needles setting too far away from the presser edge will not deliver the loops properly causing the stitches to load up on the needles. This condition also produces very bad selvedges. When a machine after long use requires a little more press, it is advisable to raise the high point of the presser cams rather than to give additional press on the rollers. This adjustment produces the desired effect without disturbing the horizontal motion of the needles in any way.

An Eye on the Knitting Mills

William Nebel, head of the Nebel Knitting Company, Charlotte, N. C., has discussed plans to establish a branch of his plant at Jacksonville, Fla., to which city he has moved personally.

Walton Hosiery Mills, DeFuniak Springs, Fla., have purchased 6 machines costing more than $30,000 from a concern in Philadelphia. The machines were trucked one by one from Philadelphia to Florida on a specially constructed vehicle.

It is understood that plans are being made for the reorganization of the Dixie Hosiery Mills, Newport, Tenn. Machinery at the Sevierville, Tenn., branch is being moved to the Newport plant.

A building has been completed at Meridian, Miss., which will house a new hosiery mill.

A hosiery mill will be located in the old Second Baptist church building, Fort Payne, Ala. The building has been remodeled. Lynchburg (Va.) Hosiery Mills have constructed an addition, 50x140 feet, two stories, to its plant at a cost of $25,000, and dyeing machinery will be installed.

The Foster Knitting Company, Burlington, N. C., has begun construction of a single-story addition to the plant, 28x100 feet, which will cost about $40,000 including the equipment.

Glen Raven (N. C.) Knitting Mills have installed two additional full-fashioned knitting machines.

Davenport Hosiery Mills, Chattanooga, Tenn., has installed a new lighting system.

It is understood that sometime in the near future a hosiery mill will be incorporated and run in Pilot Mountain, N. C.

Bremen (Ga.) Mills are enlarging the floor space to take care of additional machines.

J. A. Goodman will begin a hosiery mill at Grenada, Miss. Contracts for the construction of the building will be let soon.

Durant (Miss.) Manufacturing Company has completed its $25,000 new building and has begun to move into it.

Hinshaw Hosiery Mills, Balfour, N. C., have begun operations. Electrically heated boarding equipment is to be used in this plant.

Newport (Tenn.) Hosiery Mill has begun operations. The production of the plant is expected to be 300 dozen pairs per day when the plant is running full swing.

Albert M. Green Hosiery Mills, Milroy, Pa., have begun operation and have a potential capacity of 10,000 dozen pairs a month.

The Paul Knitting Mills Company, Pulaski, Va., will enlarge its plant with a second-story addition.

Plans are being made to establish a hosiery mill at Ennis, Tex. The plant formerly was located in Pennsylvania.

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Royersford Specially Finished Needles represent an important new advance in the technique of needle manufacture. All the facilities of our needle department are concentrated on this one product—checking, proving and testing to insure maximum effectiveness of the needles in your machines. Because the "special" finishing of Royersford Needles is a "standard" operation, you get this superior workmanship at the lowest price you ever paid for anything approaching this dependable performance.

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ROYERSFORD NEEDLES

Hosiery Shipments in 1937 Continue Above 1936

The National Association of Hosiery Manufacturers in its current *Statistical Bulletin* of the hosiery industry reports that, although total shipments of all types of hosiery declined from 11,376,479 dozen pairs in April to 9,758,687 dozen pairs in May, 1937, the latter figure was still 4 per cent above shipments of all types of hosiery in May, 1936. The gain in women's full-fashioned shipments in May, 1937, as compared with May, 1936, was 10.7 per cent, while seamless shipments increased 1.2 per cent. Shipments of ribbed and woolen goods in May, 1937, showed very large percentage gains over shipments 12 months previous. Only in the case of men's half-hose were shipments in May of this year less than in May of last year. The accompanying table compares shipments of the main branches of the industry for May, 1937, and May, 1936.

Because of the relatively high shipments for most types of hosiery early this year the cumulative data for the first 5 months of 1937 show very substantial gains over shipments during the same period a year ago. During the first 5 months of 1937 total shipments of all types of hosiery amounted to 55,009,046 dozen pairs as against 47,124,461 dozen pairs shipped during the first 5 months of 1936, a gain of approximately 17 per cent. The accompanying table shows shipments increases for the main divisions of the industry.

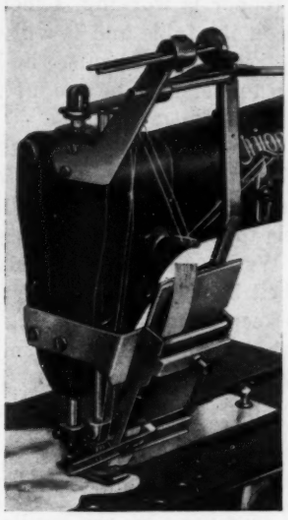
May shipments of women's knee-length hosiery were smaller than for the preceding month of April, but still showed a large gain over shipments of this type in May of last year.

Hosiery Shipments

Branch	Dozens of Pairs		Per Cent Increase	First 5 Months		Per Cent Increase
	May 1937	May 1936	1937 over 1936	1937	1936	1937 over 1936
Women's full-fashioned	3,020,953	2,729,091	10.7	15,931,704	13,714,893	16.2
Women's seamless, excl. wool	1,114,979	1,043,467	6.9	5,946,247	4,998,260	19.0
Men's half-hose, excl. wool	2,592,531	2,845,592	8.9	14,614,570	13,243,993	10.3
Children's and infants' hos.	320,787	317,931	0.9	2,441,545	2,316,362	5.4
Anklets	1,943,277	1,897,074	2.4	11,957,381	9,645,360	24.0
Cotton bundle goods	282,037	275,877	2.2	1,685,547	1,459,346	15.5
Ribbed goods	279,570	143,568	94.7	1,482,235	1,126,607	31.6
Woolen goods	204,553	126,543	61.6	949,817	619,640	53.3
Total, all types	**9,758,687**	**9,379,143**	**4.0**	**55,009,046**	**47,124,461**	**16.7**

Adjustable Guide for Stretching and Attaching Elastic to Knitted Undergarments

The Union Special Machine Company, Chicago, Ill., has announced the new adjustable guide assembly for the elastic attaching on knitted undergarments. This unit stretches the elastic and guides it through the sewing machine. The design of this guide, which is for use when the elastic is



Guide in position for sewing . . .

run in continuous strips, includes several innovations. It is so constructed that it can be raised 1½ inches above its normal position to allow the operator to cut the elastic between each garment being sewed. Formerly the elastic was not cut until after a number of garments had been sewed. In order to operate this device it is merely necessary to raise the guide, cut the elastic, and then snap the guide back into place. These operations are quickly and easily performed by hand. The guide, when in position, is set very close to the presser foot on the machine to aid in securing an even uniform margin. The presser foot used with the guide is so constructed that the elastic is held in close to the needle, thus further assuring a straight margin. It also permits the raw edge of the garment to be turned with a single lap, thereby eliminating the possibility of frayed edges.

R. H. TETLEY, formerly with the Holeproof Hosiery Company in the Southwest territory, has joined the executive staff of the Baker-Moise Hosiery Mill, Dallas, Tex., in the capacity of sales manager.

JACK JAMES, formerly superintendent of the Elizabeth James Mills, Marion, N. C., has taken up the administrative duties, succeeding his father, C. F. James, retired. C. F. SMITH, formerly superintendent of Drexel (N. C.) Knitting Mills Company, has been made superintendent of the plant, succeeding JACK JAMES.

P. H. Hanes Knitting Company, Winston-Salem, N. C., is having two 500 hp boilers re-lined.

Weldon (N. C.) Cotton Mills has completed an addition to be used for raw stock dyeing; the mill manufactures men's and boys' cotton ribbed underwear.

Above: A few of more than 200 IngAclad dye tubs as furnished to the Southern Bleachery and Print Works, Taylors, S. C. These tubs are fabricated of IngAclad stainless clad steel; they were supplied by the Ingersoll Steel & Disc Division of Borg-Warner Corporation, Chicago, Ill.

What Causes the End Needle to Drop Stitches?

While knitting a separate section of mercerized yarn for topping waste, on full-fashioned . . . .

EDITOR COTTON:

We are knitting, on our 42-gauge full-fashioned machines, an all-silk heel. Between the heel we knit a separate section of mercerized yarn for topping waste. While knitting this center section of mercerized yarn, we have considerable trouble with the end needle on either side losing its stitch, which then runs down. We also find the end needles of most heads do not have a stitch on while knitting the welts, but as soon as the first narrowing is made, this trouble stops.

I would appreciate having discussion on this subject from some of your readers with any suggestions they may have as to where we might look for the cause of our trouble and how it might be remedied.

CONTRIBUTOR No. 6690

Holes in Full-Fashioned Stockings

This man writes on a problem that is costly—and unnecessarily . . . . . .

EDITOR COTTON:

Often when the full-fashioned stocking reaches the inspection department it is found to have holes in it*, or it may be so injured and tendered that a hole will come in it soon after it reaches the customer and is in use. These holes are caused by many things, both by the machine and by handling, and if care is exercised by the operatives and others that handle the hose, many of the holes can be obviated.

We all know that occasionally the knitter will cause a hole when he cuts the strings, especially in the high spots. If he is careful he may perform this work without in any way injuring the fabric. In the narrowing operation on the machine, the needles or narrowing points out of line will cause drop stitches and holes. These may be remedied by the fixer if the bad work is reported to him.

Often there are holes in the stocking and no one knows where they come from or what they are caused by. It may be that some hard surface or object has tendered the fabric. Maybe a pencil or some object in the pocket or about the dress of the knitter strikes the hose.

Occasionally a knitter will drop a welt rod and this will punch a hole in the fabric or mash it and cause a weak spot. When the topper is working, sometimes the stocking hangs down on the table and it will come in contact with some metal which will bruise the hose. By proper instruction the topper may be taught to be careful about this point.

While inspecting in the gray, the operator may have a ring on her hand and it will strike the fabric and the table and knock a hole in the stocking. In our plant we instruct the girls to leave off their rings and watches when working. We have had cases where the girl is wearing a metal belt buckle and the hose is injured by this. We try to keep them from wearing anything that may damage the product. Another important factor in causing holes is jagged fingernails. These may or may not tear the stocking at the time the nail catches in the fabric, but if the nails catch in the yarn then it will be tendered and the yarn will break much quicker.

In seaming, along the seaming edge the needle may have a rough point which causes holes along the seamer line. Another place that may damage the fabric is the rollers. If they are meshed too tight holes will be the result, and if they are not run tight enough the fabric will slide through which will also cause holes to appear. There must be proper adjustment on the rollers.

*This subject of cutting the fabric is also discussed on page 49 of "Full-Fashioned Knitting Practices", a book dealing with practical questions in the mill, which may be had in conjunction with a subscription to COTTON.

WE invite our readers to make use of this department for the discussion of any and all problems arising in connection with the knitting mill from the office to the packing and shipping departments. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. All questions wi l be answered as promptly as possible. The names and addresses of the contributors must be given but will be held in confidence and a pen name substituted when printed. All acceptable contributions other than questions will be paid for after publication. The editors do not hold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

This is an important subject in the operation of a full-fashioned hosiery mill, and no doubt many of the readers have discovered holes cut by unusual methods. It would be interesting to have others give their experiences on this subject.

CONTRIBUTOR NO. 6700

Method of Re-Topping; Asks for Other Ways of Handling Press-Offs

EDITOR COTTON:

I know that the methods of handling press-offs, or the method of re-topping on the legging machine, in the manufacture of full-fashioned hosiery, are many, and I would like to see this subject appear in the discussion department of COTTON. This has, I know, been discussed pro and con many times, but perhaps in the last few years, with all of the improvements in machines and methods, someone has discovered a better method for doing this work. Does each legger top on his own bad work, or is one particular machine used for re-topping all of the time?

In our plant we take the bad work from the toppers and return it to each knitter that makes the press-off. The legger knitter that makes the press-off has the opportunity of running the hose on his machine. Each machine is numbered by putting an identification in the manner of making the narrowing. When the night knitter leaves at stopping time, he changes the machine so that the remainder of the work will show that it comes from the day knitter, and at the end of the day shift the day knitter regulates the markings in the narrowings so that the night knitter's work may be identified.

For instance, the machines are numbered by having No. 1 machine make one narrowing, a space, and then the rest of the narrowings. No. 2 machine has two narrowings, a space, and the remainder of the narrowings. The day knitter, at the end of the shift, changes the button, leaving a wide space between the last two narrowings. The night knitter at the end of the shift again changes the machine back.

We have found that this system works fairly well in our mill, but we are always looking for a method of correcting press-offs and re-topping that will save us time and money.

CONTRIBUTOR NO. 6698

Another Man's Method

Before this question and the method given went to press, a representative of COTTON had the opportunity of talking with a manufacturer of full-fashioned hose and he asked him to give his method of handling press-offs. This man has tried several ways of doing this particular job and now believes that the method outlined as follows proves most successful in his plant.

All of the bad hose are collected and inspected to see what is wrong with them. Also, a point is made that each knitter must press-off when there is a need for it and that the work is not run on out. There is one person that sees to this work; he prevents the knitters from wasting any silk if possible.

The hose that are ruined in the heel tab are topped-on by a girl who does nothing else. All of the other hose have the welts removed; these are backwound. The remainder of the stocking is used or sold as waste.

The girl who does the topping has special brackets upon which the press-offs are topped; the bars are so shaped that they may be placed in the machine without having to have a transfer arrangement. This saves much time and effort.

When the girl has a full set she wheels or trucks them to a machine where the bars are dropped into the machine just as on the footer. They are hooked up, bars turned, up, and the empty bars collected. The bars go back to the topper. The legger then finishes the set from where they are topped on.

Any knitter may get the full set of bars that wishes them. As they save on the average of about 20 minutes, any knitter is glad to have the opportunity of running them. There is no system as to just who will receive the set, but if the girl has topped a complete set and a machine is beginning a set, that knitter may request them and receive them.

Comments on Employee Management

EDITOR COTTON:

In these trying times that are coming to us I believe that management of mills may eliminate much grief by thinking ahead of time and meeting trouble with an open mind. Mismanagement, in my opinion, is one of the greatest evils in the full-fashioned industry. Some of the most serious troubles in the plants are caused by mismanagement and a lack of understanding between the employer and the employees. A solution to this would be to take a psychological inventory to see just what is wrong.

There should be a set of rules and regulations, but I believe that the supervisor should use them with discretion and apply them in accordance with the type individual and the circumstances. For instance, many mills have a rule that the knitters are not permitted to make minor adjustments such as setting narrowing fingers, carriers, sinkers and dividers. I agree that a knitter who has had only a few years of experience should not be granted that privilege, but an experienced knitter is capable of doing those things.

I believe in having an efficient organization, but I do not believe in stressing efficiency to such a point that harmful results will be evident. We all want to know what is going on in our mill but we should be able to know this without the stool pigeon. Often the stool pigeon will attempt to do the same things that he has reported.

After we have spent money training a man to operate machines or to fix them, I believe it would be less expensive to give this man and his failings some consideration before firing him outright. We can't expect too much from our people—when we are not perfect ourselves. Some of us do not allow

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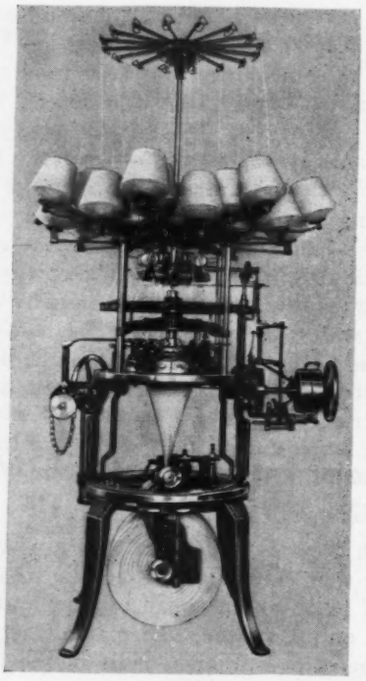

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smoking in the wash room; personally, I do not object to this providing the man's machines are not waiting for him to return before they are started.

A good program to adopt is that of having a suggestion box. The employees can meet periodically and the suggestions can be read so that they may be discussed. The employee is part of the organization and he should be made to feel as such. All suggestions should be welcomed.

Building up an efficient and loyal organization is not an overnight job, but it can be done.

CONTRIBUTOR No. 6682

Fixing Model "K" Machines

Stitch Cams (continued)

THIS is the fourth of a series of practical discussions on the operation and adjustment of the Model K knitting machine, applicable primarily to the plain machines, but containing much pertaining to the spiral type of equipment. The first installment appeared in the April issue, the second in the June issue, and the third in the July issue. Yarn arrangements, make-up trouble, the cross-bar assembly, transfer trouble, and the cylinder have been discussed. Last month Mr. Mitchell began on stitch cams, a continuation of which is the substance of the present atricle. Next month the auxiliary side cams, lower jack cams, etc., will be studied. The author will cover any particular phase of fixing Model K machines that you may request . . . .

BEFORE we leave this very important subject of Model K stitch cams, I will endeavor to add some additional and detailed information to my closing remarks which appeared in the July issue of COTTON. As stated previously, stitch cams can be reworked several times during their useful life and they will give excellent results providing the re-working is done carefully and accurately. The original shape and pitch of the various cam surfaces should be maintained; the most important cam surface is the face of the stitch cam which draws the needles downward. See Fig. 1, *a* to B. Both right- and left-hand stitch cams should be treated alike insofar as re-working them is concerned.

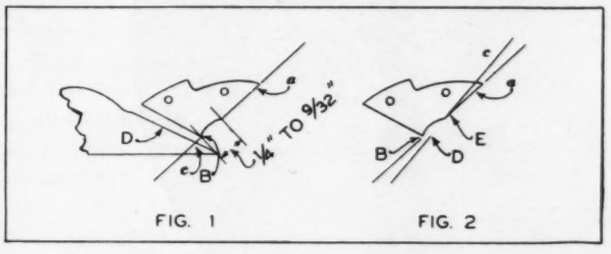

FIG. 1 FIG. 2

Fig. 1 shows a left-hand Model K stitch cam just as it comes from the machine builder; similar cams are used on Spiral K's, Plain and Spiral HH, Plain and Spiral B-5 machines. Note that the face of the cam from *a* to B is straight with the exception of the hollow ground portion; this should be from 1/4-inch to 9/32-inch long from the lower point of the cam upward and from 1/64-inch to 1/32-inch deep in the center of the hollow. The hollow ground portions in the stitch cam can be slightly longer and deeper than the measurements given here; much depends on the gauge of the machine and the type of goods being made.

The left-hand side cam also shown in Fig. 1 is equally important and has a direct bearing on the knitting, therefore its shape and adjustment must not be overlooked when it is being re-worked. The side cam should be set *in* far enough so that the needle butts will pass under the point of the stitch cam at *c* without binding against the face of the side cam as they begin to move upward. The customary way of adjusting the side cam is to move it inward until a rasping noise is produced, then it is moved outward until the noise stops. The method is both simple and satisfactory, *providing the side cam pitch is correct.* If the side cam has been re-worked and the pitch altered, the side cam may be binding the needle butts at D and still be too far away from the point of the stitch cam at *c* to control the needles accurately. We shall return to side cams a bit later.

The Polishing of Cams is Important

Every fixer knows that the first place on a left-hand stitch cam to become worn, gapped, or nicked from a long steady grind is the upper part of the face shown at *a*, Fig. 2. As a rule, a series of small nicks will show up just below the point where the needle butts first come in contact with the stitch cam. If cams are neglected for a long time, they will often become rough over the entire face of the cam from *a* to B, (Fig. 2). Thus neglect or putting off that stitch cam polishing job you were going to do *last week* (if you had time) has finally wound up into a re-grinding job, or by now (two months later) you find the cams beyond repair and you dread the job of putting in new cams, evening up stitches, re-setting sinkers, readjusting side cams, etc., etc.

Fig. 2 shows what happens to a left hand stitch cam that has been re-ground *the wrong way.* Note the original shape of the cam, *a* to B, also the present shape of the cam *c* to D, and note carefully where the lines cross at E; this is where the wrong part of this re-grinding job shows up. The face of the stitch cam is high in the center (some fixers term it a hump in the middle) and such a stitch cam is sure to give trouble sooner or later due to the increased pitch from *a* to E. The only way to make a cam of this kind fit for further service would be to straighten out the face from *a* to B and then re-grind the hollow. This, of course, would still leave the cam with an increased pitch but the increase would be divided over the whole length of the cam face instead of over half of it as shown from *c* to E.

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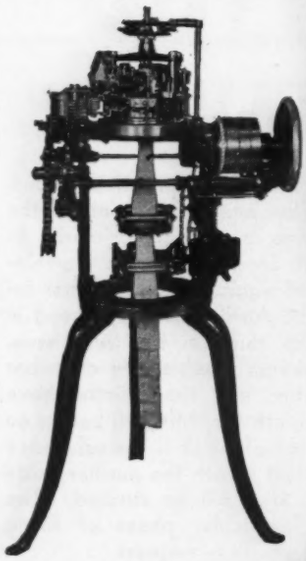

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It is only in extreme cases where cams are neglected for a long time, causing them to become badly worn, that the pitch is materially increased by grinding out the nicks. If cams are polished at reasonable intervals, excessive grinding can be avoided and the useful life of the cams prolonged. The machine builders leave sufficient leeway, when the cams are made, to allow for re-grinding and polishing, however, they do not supply the horse sense with the cams for their machines; the mill must supply that and much depends on how well it is supplied and used.

Grinding the Cam

Looking at Fig. 3, the right-hand stitch cam shown in this sketch is used on plain single deck Model K machines that use a one-piece stitch cam bracket. It is generally known as a swivel type stitch cam and is used in connection with the fashion marks attachment. The cam is used in every respect like a stationary cam, however, there are several points to be kept in mind when it becomes necessary to re-work this cam.

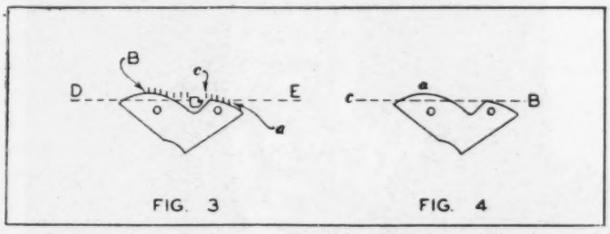

FIG. 3 FIG. 4

Keep the right-hand (shoulder) screw tight in the cam but leave the shoulder long enough to permit free up and down movement while the fashion marks are being made. Sufficient stock must be left on the upper cam surface at B (Fig. 3) to assure shedding the stitches off of all needle latches when the cam is up, and the upper cam surface at *a* must be high enough to shed the stitches off of all the needle latches *except* the fashion marks needles when the cam is down. While the fashion marks are being made, the cam must drop low enough so that the upper surface at B will be slightly under a straight line drawn from D to E.

Because the right-hand portion of a swivel stitch cam is low above the shoulder screw hole, it is necessary to get more lift on the up pick because the pick must drop lower on a swivel cam than it does on a plain stitch cam. This calls for a closer adjustment on the pick; here I might say that a properly fitted pick will pay dividends. Keep the pick high enough so that the needle butts will just pass over the lip as they leave the stitch cam; The lower the pick is set the harder it will be for both needles and pick to function properly. Jam-ups, needle and pick breakage, and the like, are often caused by the pick falling and remaining on the upper cam surface instead of going down into the pick recess. This can be prevented by tapering off the pick recess on the stitch cam as shown at *c*, Fig. 3, then the pick will slide into the recess if the cam is shaped thusly.

One other type of right hand stitch cam is used on plain single deck Model K machines, it is known as the float type and is used to make both fashion marks and a picot edge hem top. The cam moves up and down (vertically) and at the half way down position it makes fashion marks; when it is all the way down the picot edge is made on needles running at the lower level. Neither of the last two cams mentioned can be considered as trouble makers, however the fixer must bear in mind when repairing old or fitting up new cams that both are movable in the stitch cam bracket.

The right-hand stitch cam shown in Fig. 4 is the plain type that is used on Spiral K machines and 13- and 25-Step Spiral B-5 machines. It is attached to a split stitch cam bracket such as is used on all double-deck S. & W. machines. This type of bracket permits moving the right-hand stitch cam and bracket in and out, which is necessary to make meshes, floats, and the like. Frequently the fixer may find a machine making dropped stitches in the leg, foot, or ring toe while the stitch cam is *in* flush against the cylinder. This particular trouble can be caused by a number of things not related to the stitch cam, however, it often can be overcome by grinding off the slight hump shown at *a* (Fig. 4) so that the needles will run level from B to *c*.

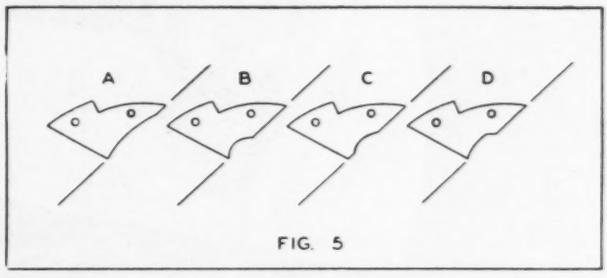

FIG. 5

And now, friend reader, comes the grand finale, for in Fig. 5 I have reproduced a "fixer's eye view" of 4 stitch cams which I have in my possession today. These are but a few of the many I have, for my hobby has been to save such wrecks over a period of years and I have quite a number. Believe you me, they were removed from machines which were being "fixed" by supposedly good fixers. Did they give trouble?—you can bet your last dime they did. If you doubt by statement try one some time. Perhaps you will agree that intentionally or otherwise, someone did a mighty rotten job of cam grinding to say the least.

The Left-Hand Side Cam

The left-hand side cam (usually called end cams or raise cams by machine fixers) is also one of those used, abused, neglected and forgotten machine parts which gets about half the attention it really deserves. Why? Simply because the average machine fixer fails to realize how important this little cam really is. Just recently I saw a good example of everyday side cam trouble which may interest the reader. One of our younger machine fixers was having a bad day with a fine gauge Model K—he was trying hard, but getting exactly nowhere fast. One of our veterans came along and offered to help: "What's wrong, boy? Oh! Everything? It won't stay in size, is cutting holes in the heel and toe, and is making streaks in the leg?" (The lad had a silk stocking on a sizing board and it was a sorry looking piece of merchandise. The veteran began to ask questions: "How about your needles?" They were new, put in only two days ago. "Sinkers?" Also new. "Stitch cams?" Okay. "Yarn tensions?" All right

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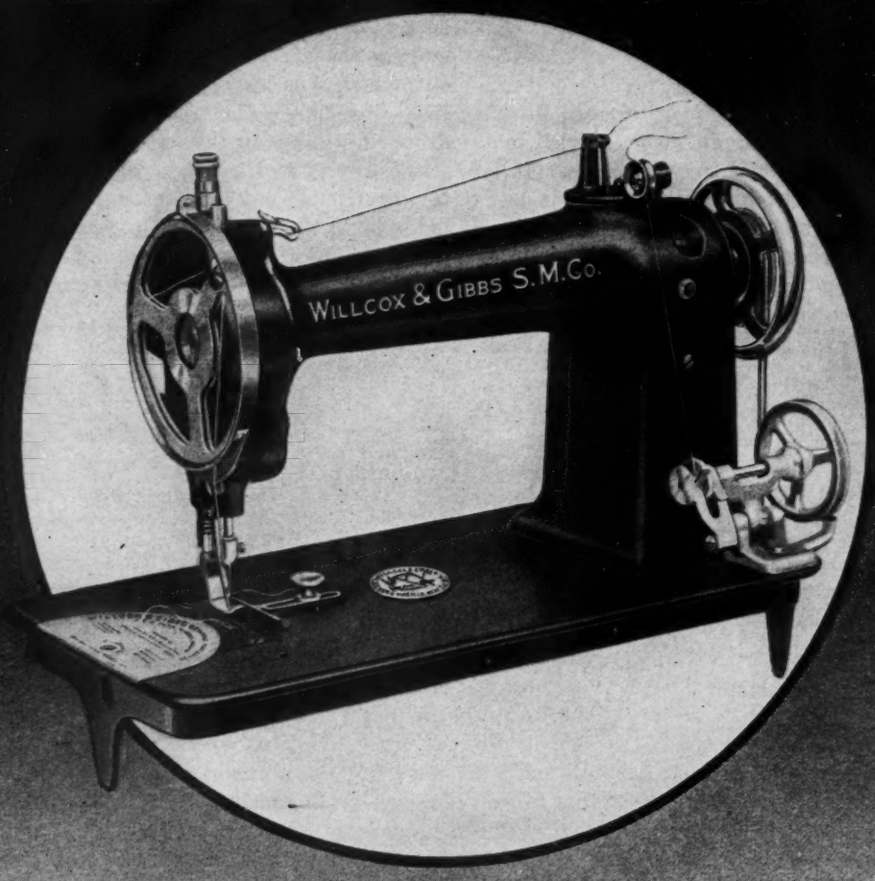

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"Boy, you've got something here—your stitches in the heel and toe are even. How about the side cam?" Well it's okay now—it was *in* too far and made the stitch in the heel and toe uneven so I moved it *out* several days ago. "Well, son, that's where you were wrong; never move a side cam out to even up stitches in the heel and toe, and don't advance or retard your sinker cap adjustments either to correct such troubles. You may have seen such things done by men who call themselves machine fixers but take it from me, you're fixing yourself a nice mess of trouble when you do a job like that.

"Move that side cam *in* as far as it will go without binding the needle butts, knit a stocking and bring it to me on a sizing board." The boy did as he was instructed and the stocking was 3 inches too short, and the heel and toe looked like a washboard.

"Boy, what this machine needs is a new left-hand stitch cam; ask the boss for one and I'll help you put it in." The veteran helped with the job and the boy promised never again.

Now, you may say that the trouble was not caused by the side cam after all—right you are, but if the boy had set the side cam right in the beginning and stuck to his guns, he would have found the real trouble. It was just another case of where two wrongs will never make a right.

MATTHEW K. MITCHELL

A Method of Checking Orders from Gray Room to Shipping Department

EDITOR COTTON:

We have found that our method of checking orders to customers from the gray room through the shipping department is both simple in procedure and accurate in results. I will pass it along to you because it may help some man that is having this problem confront him.

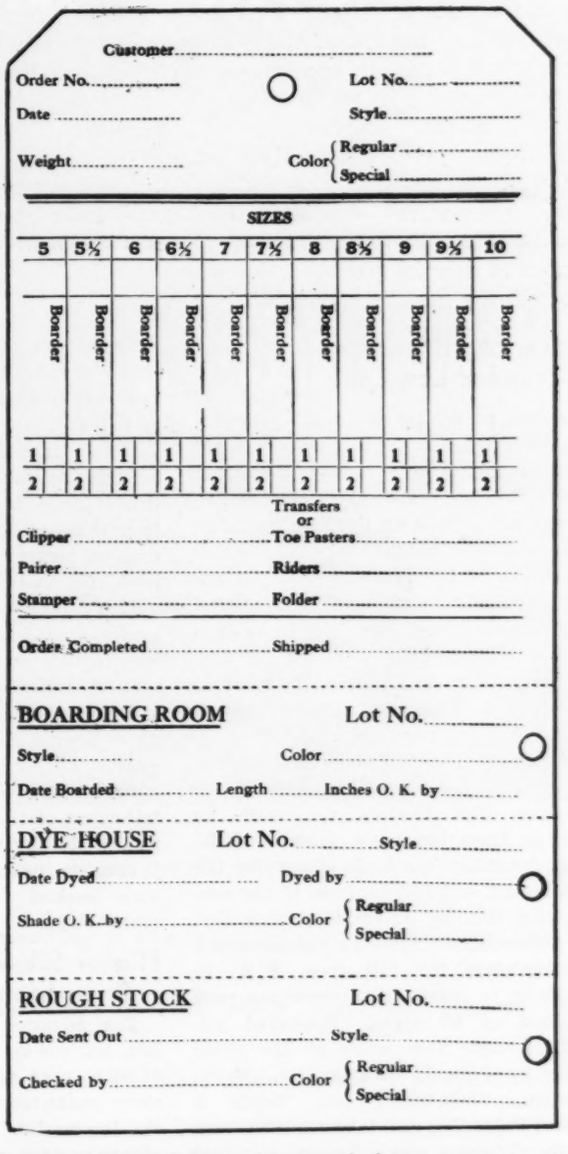
All of our gray goods go to the gray goods room where they are placed in bins according to size. As an order comes in from one of our customers we take the accompanying form and write his name at the top where it says "Customer", fill in the order number for a record, the date, style, and color. The sizes ordered are filled in by a numeral meaning the number of dozen of each size.

This form is hung on one of the bins in the gray goods room and the "Rough Stock" man comes along pulls out the number of dozen of the right size, marks the style on the card, fills in the lot number, and sends the goods to the dye house, retaining the end of the form for his own reference. He has marked the color on his stub for his own use and for later records in checking. His name is also on the ticket in the place "Checked by".

The dye house foreman also fills in the lot number, style and dyes them according to the instructions at the top of the form. The form is now in his possession with the exception of the bottom part which the "Rough Stock" man has retained. When the goods are dyed, the person okaying the shade, initials the dye house ticket, and the person's name dyeing them is recorded under "Dyed by". The foreman of the dye house then retains the "Dye House" ticket and gives the goods along with the rest of the form to the boarding room foreman.

Goods Are Checked at Each Change

This man follows the same procedure by checking the style, length, color, date, and also sees that each boarder that boards the different sizes puts his name on the ticket directly under the word "Boarder".


Customer.....
Order No..... Lot No.....
Date..... Style.....
Weight..... Color { Regular..... Special.....
SIZES
5 | 5½ | 6 | 6½ | 7 | 7½ | 8 | 8½ | 9 | 9½ | 10
Border | Border | Border | Border | Border | Border | Border | Border | Border | Border | Border
1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1
2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2
Transfers or Toe Pasters
Clipper..... Riders.....
Pairer..... Folder.....
Stamper.....
Order Completed..... Shipped.....
BOARDING ROOM Lot No.....
Style..... Color.....
Date Boarded..... Length..... Inches O. K. by.....
DYE HOUSE Lot No..... Style.....
Date Dyed..... Dyed by.....
Shade O. K. by..... Color { Regular..... Special.....
ROUGH STOCK Lot No.....
Date Sent Out..... Style.....
Checked by..... Color { Regular..... Special.....

Form used by mill in routing goods from gray room to shipping department; it is perforated so that each department may retain a check on processed work.

From the boarding room the form, minus the "Boarding Room" stub, and the goods go to the clipper, pairer, stamper, toe paster, rider hand, and folder. Each in turn initials the ticket. By this time we know that the goods are going to be what we ordered from the gray room because so many people have checked them.

CONTRIBUTOR No. 6608

THE KNIT GOODS MARKETS . .

Uninterrupted Consumer Sales Needed to Balance Record-Breaking Production of Hosiery and Underwear
Full-Fashioned Hosiery Prices Stronger

Philadelphia, July 16, 1937

ALTHOUGH manufacturers of knit goods have been operating at somewhat less attractive rates in recent weeks, production schedules have continued high and indications are that final figures for the first half of the year will show new highs in the production of hosiery and underwear for such a period. Production and shipments of underwear for the first four months of the year showed this industry operating at an unequalled pace. In the largest division, including knit underwear of cotton or wool, production from January to April was ahead of last year by 38 per cent. Unfilled orders at the end of April were about double that a year previous. Hosiery shipments for the same period were up 20 per cent compared with the same period last year. Higher silk costs plus higher wage costs beginning August 1 for many knitters are forcing advances in full-fashioned prices. Outerwear demand for the fall season is slow in getting under way but a healthy season is expected to start in the next few weeks.

Advanced Prices for Branded Low-Ends

Advances made by branded houses in low-end full-fashioned hosiery early this month were a market highlight coming at just about the time the National Association of Hosiery Manufacturers issued a bulletin which called attention of its members to the higher costs of manufacture just around the corner. They were urged to examine costs especially in view of new agreements with the hosiery union by northern knitters meaning increases of 15 to 22 cents per dozen.

Fall lines of full-fashioned hosiery were opened early this month by the Gotham Silk Hosiery Co., with no change from the basis price of $6.35 per dozen which took many in the market by surprise because of the previous action by Julius Kayser & Co., in advancing its low-end full-fashioned merchandise for fall from $6.35 to $6.50 or to retail at 89 cents per pair instead of 85 cents. Scattered advances were also made at the same time by Phoenix Hosiery Co., Mock, Judson, Voehringer, Inc., Nolde & Horst Sales Co., and Interstate Hosiery Mills. Phoenix marked up its so-called low end numbers from $6.35 to $6.50; Mock, Judson advanced two of its numbers from $6.30 to $6.45; Nolde & Horst stressed numbers to retail $1.15 hose instead of $1.00, as in the past. Interstate advanced a 2-48 crepe and a 45-gauge mesh stocking 25 cents to $8.50 and introduced a new number at $7.25; Kayser also advanced a 7-thread number and a 6-thread from $8.25 to $8.75, adjusting the retail tags from $1.15 to $1.25.

There are strong indications that these advances may not be the last but rather that additional increases in full-fashioned prices will be seen early in the fall. Volume numbers principally were the ones raised by these large branded firms and the fact they were quoting only to the end of next month causes some to look for advances in the higher priced lines after fall buying gets under way. Another feature of the new fall branded lines is that continued marked attention is being given to novelty numbers which have been active sellers so far this year. That the advances were not general is a reason why retail distribution of the lines should be large in the coming months so that no unfavorable reaction to the increases was looked for from department store buyers.

Higher Silk May Bring More Increases

The advance in raw silk over the last six weeks from a low of around $1.80 to over $2.00 is also causing hosiery manufacturers concern because the impression is prevalent that these plants are not covered very far ahead. It means their raw costs will go up about the same time as their wage rates are being upped 6 per cent or more to say nothing of other increased overhead. The consumer of hosiery in the final analysis will have to pay these bills and the question later on that will have to face knitters is how far prices can go up before consumer reaction develops in the form of a smaller taking of hosiery than when prices were low.

An indication of what some manufacturers of men's half-hose will do for fall was seen in the announcement of Holeproof Hosiery Co., that its fancies formerly selling to retail at 35 cents or three pairs for $1, had been moved up to $2.75 per dozen, with a new suggested retail price tag of 39 cents or three pairs for $1.10. Fancies formerly selling at retail for 50 cents have been advanced to $3.80 per dozen and have a revised retail price of 55 cents. There were some reports in the retail end that buyers were resisting the price increases for fall. Manufacturers of these lines have been reporting a draggy demand with low priced numbers inclined to be less active than the better and higher priced items. Improvement in the market for low-end fancy half-hose has been brought nearer by the recent curtailment of production by several important manufacturers.

Several of the leading manufacturers of infants' novelty socks and anklets have been quoting prices for their next spring season to the larger buyers. It is doubtful that any important volume of business for this far ahead has yet been placed with the possible exception of 10-cent anklets. Buyers, as well as manufacturers, are confused by uncertainties in the price situation because of pending labor legislation and because buyers desire to see all of the important lines before making commitments. Not all manufacturers have displayed these lines and in some instances they are not going to rush the season as it is pointed out that, with the exception of a few large buyers, who always operate early, definite business seldom starts in volume on this type merchandise until September.

Production Held Down by Uncertainties

This year, with the threat of advances in labor costs, may throw goods out of the retail price range for which they are now intended, so that some mills are proceeding with more than usual caution. These manufacturers have a good volume of fall business on hand and this is another reason why they are in no hurry to sell a large volume for the 1938 spring. There has been little evidence thus far, except in low-end anklets, of buyers' desire to operate quickly in an effort to have manufactured all the spring goods possible before the threatened rise in labor costs becomes effective. There is

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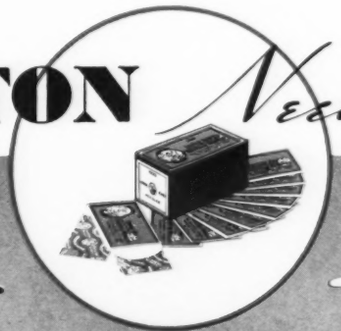

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Closed-Shop Group Signs New Agreement

PHILADELPHIA—An agreement for a new national agreement was signed July 15 between the Full-Fashioned Hosiery Manufacturers of America, Inc., the closed shop group of mills and the American Federation of Hosiery Workers. It will become effective August 1 and provides for a wage increase averaging about 6 per cent. It is expected to increase full-fashioned hosiery prices 15 to 22 cents per dozen and without doubt will be followed by other Northern mills so that by September 1 the industry in that section will be on the higher wage basis.

doubt as to the passage of the Administration's labor bill at this session of Congress and many feel that even if passed, it will have a much smaller effect on costs than was feared several weeks back.

Although full-fashioned hosiery manufacturers in the Pennsylvania district have been booking new business at less active rates during the last month, which is a seasonal development, it is expected that production for the first half of the year topped that of a year ago by a considerable margin. Hosiery shipments for the industry as a whole were up 20 per cent for the first four months of this year as compared with last, even though a large section of the industry, especially in the Reading district, was affected by strikes which were terminated by the general agreement and resumption of operations in that section on April 19.

Full-fashioned buying for fall has not become general notwithstanding the upturn in raw silk and the certainty of higher wage scales in Northern full-fashioned plants this fall. It is apparent that the better type merchandise has been in a firmer position than strictly sub-standard goods and many mills, although running out of orders, have not been breaking prices. In addition, few of them have been soliciting business beyond September 1, indicating that they expect prices in the primary market to go higher, due to these developments. The market in fact has stood up under the quiet period of the last two months in better fashion than is usually the case, so that the move toward higher prices for fall started at the beginning of this month by leading manufacturers in the branded full-fashioned field is a good indication as to what may be expected during the latter half of the year.

It is significant, however, that in issuing their new fall price list, branded manufacturers held their important lines unchanged in price, which means that many are not inclined to force price advances because of their reluctance to take their merchandise out of the former retail price brackets. Caught between the tendency to increase wage levels and the fear of growing consumer resistance toward price increases in retail tags, if they advance quotations too much, indications are that manufacturers will have less favorable operating margins during the second half of the year than they experienced in the first six months. In view of this it is felt in some sections of the trade that branded manufacturers will have to lift prices again before the end of the fall season. The increased mark-up coming into what was already one of the most profitable departments in the average department store, is not expected to affect adversely the handling of branded hosiery in volume. For the first six months of the year, branded houses have moved out more hosiery than ever before and this consumer demand for branded goods is not expected to drop with only a four-cent increase in the retail price of the popular-priced numbers, especially as wage levels throughout the country are gradually being raised.

While one manufacturer has indicated that he feels it may be yet a little too early to advance hosiery prices, there were others who felt that conditions were such that moderate increases could easily be absorbed and not affect volume. The new branded lines were carefully studied also because of the constructions offered. The department store hosiery buyer seldom had such a wide variety of styles and constructions from which to choose. However, judging from the emphasis placed upon certain constructions, it would seem that the branded manufacturers are not agreed upon the styles to be stressed. One of the largest manufacturers which also sells unbranded hosiery in its line of branded goods for the retail trade offered nothing but crepes and high twists in all but two of its numbers. The other two numbers were meshes, there being no conventional-twist number in the line. On the other hand, another branded manufacturer showed only one stocking termed a crepe out of a total of 33 numbers.

Another branded manufacturer has added five entirely new novelty constructions, indicating that the novelty trend, instead of waning, is just about getting under way. Most of the branded lines give greater emphasis on the novelties, which is interesting in view of the fact the coming season is the winter season and novelties are generally considered best during the warm-weather months and the opinion has been expressed that the novelty trend can be expected to reach well into the new year. Greater importance has been accorded in the fall numbers to fashion not only in the novelties, such as colored heels, iridescent stockings and mesh toes and heels, but in the general color range of the hosiery and the place hosiery shades are being made to assume in the general fashion picture. Generally speaking, the entire color line in the branded field is somewhat lighter than last year and reflects the current fashion importance of the beiges. Hosiery shades have gotten away from the idea of merely being light in summer and dark in winter. More and more they are being selected not as a separate item in themselves but as an integral part of a woman's whole costume. The fall color trend in dresses, coats, gloves, handbags and footwear, have been given greater consideration this year to assist in developing hosiery colors, which will fit in with and augment the general costume color scheme. Variety of construction and selection of colors have been termed as the best job the branded field has done for the department store hosiery buyer.

Higher Wage Costs in Northern Plants

Indications are practically all manufacturers of full-fashioned hosiery in the North will begin paying higher wage scales beginning August 1st or shortly thereafter, following negotiations between the hosiery union and the Full-Fashioned Hosiery Manufacturers of America, Inc. The new wage scale is to become effective August 1 so far as members of the closed-shop group of mills is concerned, the increases ranging from 6 per cent upward, with the higher increases being for the auxiliary workers and the smaller or 6 per cent advances being for the knitters. In commenting on the pending signing of a new national agreement between this association and the American Federation of Hosiery Workers, Joseph Haines, Jr., executive secretary, said that a high standard of wages and conditions of employment will thereby be established throughout the northern section of the industry. He added the new agreement embodies increases ranging from 5 to 10 per cent, the result of a 6 per cent basic rate increase, plus various other

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Of Purchases Bought on Impulse!
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Your Products Take Advantage of That First Impulse—which is to BUY

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upward adjustments. By the acceptance of these rates approximately 119 plants representing 63.3 per cent of the full-fashioned equipment operated in the North will set a standard of wage rates which will likely be adopted and installed throughout that section of the industry in the very near future.

Under the proposed contract, strikes, lockouts, picketing, etc., are prohibited, so that firms entering into this contract are assured, Mr. Haines stated, of no interruption in production on account of labor relationships during the next fiscal year. This development caused the issuance of a statement by the National Association of Hosiery Manufacturers in which it was stated that indications are at least 50 per cent of women's full-fashioned production will be manufactured during the next few months at an increased labor cost of 15 to 22 cents per dozen. The statement said also in addition to increased labor costs, other factors have to be borne in mind by manufacturers, such as pending legislation on hours and wages, the rising prices on commodities, equipment and services, which go into the manufacture of hosiery. Attention was also called to the fact the Social Security tax payment will go up another 1 per cent on payrolls, beginning January 1, 1938.

The hosiery union has made rapid strides in organizing full-fashioned plants in the Philadelphia territory and early this month, the union claimed that there were only four mills in the city that had not signed closed-shop agreements. The unsigned mills at that time were Apex, Oswald, Fox Chase and Marshall Field. The latter company was being picketed by the union to prevent the removal of machinery to a southern location. At the present time, negotiations are in progress by a large group of former open-shop plants but that have within recent weeks signed a closed-shop agreement with the union. The union is now attempting to reach an agreement with these mills, such as it has already done with members of the Full-Fashioned Hosiery Manufacturers of America, Inc., which would place most of the mills in this section on the same wage basis.

Jobber Sales Off, Knee-Lengths Wane

Hosiery jobbers in this section have had a less active month than any so far in 1937, with dollar sales showing little change, as compared with June, 1936. Compared with the same months last year, June was the smallest month with jobbers who had previously registered gains compared with the same month last year, up to 25 or 30 per cent in the first quarter. Trading with them in July has not changed materially either way, several terming business fair, while others admit that it is quiet. Prices on various lines of knit goods have not changed during the month, although jobbers report in some instances that some manufacturers of men's half-hose have been more anxious to sell and to stimulate business, some have been making slight concessions. One jobber placed a medium-sized order for half-hose and was able to secure a billing on the merchandise two months ahead.

Several wholesalers say they have been doing in the last few weeks a less active business in women's knee-length hosiery than they did early this year but they attribute this to the fact that many of their customers bought rather heavily early in the year. At that time jobbers' stocks were small and orders were developing at a more rapid rate than the jobbers could handle, so that this acted as a stimulant for some jobbers to place larger orders for knee-lengths than they have been able to move. On the other hand, some of the wholesale distributors believe that the style trend of shorter skirts is playing a part in the less active demand for knee-lengths. Irrespective of this, indications are that the production of knee-length goods by the manufacturers during the first half of 1937 will set a new high record. Some of these firms say that they have found demand for seamless knee-lengths to retail at 25 and 35 cents per pair larger than in full-fashioned goods of this type.

The National Association of Hosiery Manufacturers reports that although total shipments of all types of hosiery declined from 11,376,479 dozen pairs in April to 9,758,687 dozen pairs in May, 1937, the latter figure was still 4 per cent above shipments for all types of hosiery in May of last year. The gain in women's full-fashioned shipments in May was 10.7 per cent, while seamless shipments increased 1.2 per cent; shipments of ribbed and woolen goods showed a very large gain over shipments a year previous. Only in the case of men's half-hose were shipments in May of this year less than in May 1936. Hosiery shipments of all types for the first five months of this year showed an increase of 16.7 per cent over 1936, with women's full-fashioned showing an increase of 16.2 and men's half-hose exclusive of wool, 10.3. Knee-length shipments for the first five months showed an increase of 67 per cent over the same period in 1936, with full-fashioned knee-length increasing 56 per cent and seamless 82.

New Mill in Virginia, Headed by Associates of Berkshire, to Have 26-Section Machines

A NEW full-fashioned hosiery plant to be located in Virginia is being organized by relatives of Henry Janssen, vice-president of the Berkshire Knitting Mills of Reading. The new Wytheville Knitting Mills, Inc., will be equipped with 50 new machines all of 51-gauge made by the Textile Machine Works of Reading, of which Mr. Janssen is president. All machines will be 26-section, a new development. Ferdinand K. Thun, of the Berkshire Knitting Mills, said the new corporation would have no connection with Berkshire. Incorporated for $201,000, the new firm has the following officers: Richard C. Wetzel, president; Dr. John E. Livingood, vice-president; Minnie J. Livingood, vice-president; Helen J. Wetzel, secretary. Mrs. Wetzel and Mrs. Livingood are daughters of Mr. Janssen. Dr. Livingood is secretary of Berkshire. Construction of the new project has begun and will consist of two buildings, each 324 x 72 feet with a total of 45,000 square feet of floor space.

Underwear Mills in Strong Position Even Though New Business Has Been Smaller

Although underwear manufacturers have enjoyed a very active year so far, new business has recently shown a decidedly less active trend, but most of these manufacturers have a good backlog of business. Indications point to a short period of less excited trading and then most agree that the latter months of the year will witness a resumption of activity but possibly with manufacturers unable to duplicate the records reached during the first quarter of this year. Underwear mills that run out of orders have generally decided that they will not operate on stock but will close down. This decision was arrived at by a number of manufacturers, especially some of the up-state New York mills, who had reached the point where they had to make the decision one way or the other. The underwear industry has had a steady run since the first of the year, many mills working at higher capacity than ever

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before in their history.

Good sized bookings, both on spring merchandise as well as for next fall, made up the basis for the activity of the past five months or more. Since this business was taken, many of the mills have given voluntary wage advances and then have to add to these advances in agreements recently made with the union. Costs therefore have been greatly increased on merchandise that was sold at cheap prices. With business now uncertain and new orders much smaller some of these manufacturers have been forced to curtail rather than speculate on the future by making up merchandise at high cost. At the end of April the Department of Commerce showed that manufacturers of knit underwear of cotton or wool, had a very large backlog of unfilled orders, amounting to more than 6,000,000 dozens against more than 3,000,000 the same month a year ago. This unusual situation is a combination of the usual spring orders on the books of manufacturers plus the large volume of business that was booked for the coming fall season. The fall business this year was placed early, mills having booked most of their fall orders on men's and boys' goods during the first couple of months this year.

Re-orders Coming from Chains

At present, the situation confronting the industry is the distribution of this large quantity of merchandise over the retail counters to consumers. One favorable development along these lines has been the recent improvement in the retail distribution of lightweight underwear, due to the hot weather but even with this considered, manufacturers recognize that they cannot hope to get much new business until stocks with wholesalers and retailers are decreased. Parts of the knitting industry will not be surprised if the next month shows a sharp let-down in mill activity from the first six months of the year. Underwear production for the first four months was actually 40 per cent of that for the entire year of 1936, which was the biggest year for the industry. Retailers have been doing a good volume, but it is recognized it will take continued consumer buying through August to get their stocks and most wholesalers down to a comfortable level.

Recent weeks have brought out good size re-orders, especially in men's staple goods. The largest of these came from the chain stores. The wholesalers, on the other hand, have been re-ordering only in fill-in quantity and did not show any indication of buying far ahead against future needs. Some of the chain buyers on the other hand, took care of their needs for the balance of the lightweight season. The progress of the spring underwear season this year has proven again that retailers of all kinds, whether the independent stores or the chains, have found business volume was maintained only when price levels fit in with the purchasing power of consumers. Where advances were made on large selling numbers, like athletic shirts, manufacturers quickly found that new business dropped. The result has been that the revisions following the weaker cloth and yarn markets again brought out new buying. One example of this was the announcement by the manufacturers of a well-known branded line of men's shirts and shorts that they are now ready to accept new business from wholesalers, allowing a resale price at 25 cents a garment, the popular range for this merchandise.

It is almost certain that the fall season will follow the same lines as that for this spring in the matter of price levels and demand. Buyers own their initial purchases of heavy underwear at reasonable prices, permitting thereby the passage of this merchandise on to the consumer at levels that will not meet with opposition. The current lightweight season has again shown the popularity in men's underwear in shirts and shorts, with volume in these numbers being large. Also the demand is again heavy for the knit short of the brief type. Re-orders on the latter have been good in the last few weeks. Men's staple balbriggan shirts and drawers have been slow and the current season has brought new improvements in this business, which in former years represented such a large volume. On the other hand, it has shown a still further loss in popularity. The athletic shirt and woven shorts and more recently the knit short, it is recognized, have affected unfavorably the old-type shirts and drawers. For some time the balbriggan machines could be used on the athletic shirt styles also, but in recent years even this source of production has been curtailed as the ribbed shirt has displaced the flat net for a good part of the country.

Manufacturers have been shipping out a larger volume than normal for this time of the year of heavy underwear against fall contracts. Unsettled conditions that might interfere with production, like strikes, together with other threats to higher costs, have led many of the larger wholesalers to feel it would be good policy to have next season's merchandise on their shelves, rather than in mill warehouses. In this way, the movement of heavy underwear to distributors has gotten an early start with increased momentum being apparent during the last week. Most buyers by this time have become convinced that they operated wisely when they placed underwear orders early for next fall. Wholesalers have also found that some of their retail customers are showing the same interest in getting in fall underwear earlier than usual.

Little is heard at present about the next spring opening of underwear lines. The reasons for the absence of the usual talk of another season is the unsettled situation of industry as a whole, due to labor troubles and Government action toward more regulations. However, there are no comments being heard about the prospects for prices for next spring as yet.

New Association of Mills in Berks County, Pa.

PHILADELPHIA—Permission to incorporate a new hosiery association was sought late in June by a group of manufacturers in the Reading section, most of which are full-fashioned hosiery plants that last April signed an agreement with the hosiery union. It will be called the Keystone Hosiery Manufacturers, Inc., and will not be confined to mills in the Berks County section and both seamless and full-fashioned will be eligible. Berks County full-fashioned plants in past years have confined their membership to the Full-Fashioned Hosiery Association, Inc., with headquarters here, this being the so-called open-shop group. Now that an agreement has been signed several mills felt that a new group should be formed and while some may not continue with the old association membership can be held in both, organizers of the new association stated.

The incorporators are John H. Vogt, president, Nolde & Horst Co.; C. Hunter Biehl, Busy Bee Hosiery Co.; Charles L. Haeussler, Fedden Bros. Co., Inc.; George R. Meinig, Meinig Hosiery Co., and Thomas E. Gantz, Temple Full Fashioned Hosiery Mills.

The board of directors named consists of Messrs Vogt, Haeussler and Gantz and J. Lee Bausher, Infants' Socks, Inc.; L. A. Lutz, Wm. G. Leininger Knitting Co.; William F. Muller, William F. Muller, Inc., and W. D. Burkey, Burkey Underwear Co. Mr. Muller is given as treasurer.

REVIEW OF THE YARN MARKETS

Registers Important Advance. New Poundage Broadening. Cotton, Worsted and Rayon Yarns Steady While Silk

Philadelphia, July 16, 1937

ALTHOUGH cotton and worsted yarns continued easy until late last month July has seen a steadier trend than has been apparent for three months and while spinners are not quoting any higher it is evident that fewer of them are naming new lows. Prices have been moving sideways in both cotton and worsted for two weeks and where any changes are made it is toward a firmer attitude on their part. Rayon yarn prices are unchanged and the most active of any of the fibers. Silk has registered an advance of more than 20 cents from its June lows and manufacturers that did not buy are not covering at the higher level, sentiment in silk being more bullish than for months.

Cotton Yarns

Although cotton yarns are now quoted at 1 to 2 cents less than this time last month the markets are steadier, the declines having stopped early in July and for the present are showing no change and a better tone. Some of the larger buyers have been coming with the market since July 8 the date on which the Government issued its acreage report showing a smaller acreage than the trade expected and since then some of these buyers have felt the time ripe to begin to take in some yarns for the fall goods.

Compared with a month back raw cotton is up about a half-cent while cotton yarns are off from 1 to 2 cents. This means smaller profits for spinners but this may not hold and when buying starts many believe spinners' margins will again expanded although not possibly to the attractive levels they enjoyed during the first quarter of this year before the dull period set in. Compared with this time last month 10s carded cones are being offered 2 cents low; at that time spinners quoted 26½ cents for this count in average quality which during the last week sold down to 24½ cents but the average asking price is now 25½ cents. Carded weaving like 20s/2 sold last month at 31 cents is now in extreme instances down to 28 cents with most asking 29 cents.

Combed yarns have also dropped but during the last ten days have not changed. Combed single for knitting can be bought down to 37 to 38 cents compared with 41 cents quoted by most yarn producers a month back; ply combed yarns have dropped but not quite so much as the single in which competition has been keener. Spinners say their specifications for ply have held up during the dull period much better than the single but combed spinners of both classes have been curtailing and they have refused to accumulate large stocks with which to burden the market when conditions change.

Mercerizers have announced no change in their list which was put in effect months back with 60s/2 ungassed at 79 cents. Knitters claim to have been offered yarn for less but there has been little new poundage placed in recent weeks and specifications have displayed a tendency to diminish. Mercerizers have been taking in ply combed yarns from spinners at fair rates and better than other consuming trades. Mercerizers say that while combed yarns are lower their margins were previously too small.

During the last two and a half months cotton yarn prices have registered a drastic decline, especially in the two-ply carded weaving numbers. Counts like 20s/2 struck a peak at 38 cents early this year and the same yarn has been offered recently to local manufacturers as low as 28 cents; single yarns used by the knitting trades have declined drastically also but the drop so far has been less extensive than in the ply, 10s combed reached a peak of approximately 31 cents and recently have been offered at 24½ cents.

Worsted Yarns

Although worsted yarns have not changed materially in price over the last month, a steadier tone has been apparent during the last two weeks and spinners are now asserting that wage increases which many are making or are about to make, will bring about higher prices before active fall coverage gets under way. The raw material market has been showing a firmer appearance and this together with higher overhead costs for manufacturers and spinners has given quotations greater steadiness. At the same time a better demand has been developing than in June but poundage remains considerably under spinners' expectations for this time of the year. Men's wear manufacturers have been operating at fair rates but mainly on old orders and comparatively little new business has been placed by this trade in the last month. Some of these weavers, in addition to other uncertainties, have been affected by union organizing activities, which has made it more difficult for spinners to do new business with them.

Better demand has been making its appearance for the first time in months from dress goods weavers that are now operating on fall and winter fabrics and while the bulk of these materials will be manufactured from woolen yarns, a fair poundage of worsted counts is expected and in fact, some of this type business has been placed within the last ten days. Sales of 2-50s to them has been reported at $1.90, which represents little if any change as compared with a month ago. These plants usually have a very active run for two to three months and then a period of quietness usually follows.

Fall coverage by outerwear manufacturers has been conspicuous by its absence, although a fair amount of business from this trade was booked in July of last year. In view of other uncertainties, such as labor disturbances, buying this year will be late in getting under way because quite a number of wholesalers and retailers are carrying fair-size inventories of spring and even heavy goods which they failed to move in the expected volume during the previous two seasons.

Rayon Yarns

There has been no decline in sales of rayon yarns during the last month, such as has occurred in all the other textile fibers. When producers opened their books early this month for the booking of September delivery business, they experienced a demand as active as any time this year, which means that sales were being made at approximately the best rates in their history. Several of the larger producers reported that within a few days after opening their books, they succeeded in selling the entire month's production and that in some instances, weavers of dress fabrics, were not able to obtain all the yarn required for their September needs from certain producers. No change in prices was made and there are no indications that this is in prospect. Stocks of yarns in producers' hands have declined further and in the case of one of the largest producers, reached a low of one day's production, as of the end of June.

Silk

Raw silk prices have staged a remarkable upturn since the beginning of June, the advance from that time being approximately 20 cents a pound, which is an important increase in costs for both hosiery and fabric manufacturers which are beginning to work on the fall goods. It is not believed that domestic manufacturers covered their needs very far ahead at the lows of early June but there has been more activity than for some time past during the last three or four weeks. The situation is being compared with this time a year ago. Manufacturers of hosiery are becoming slightly more bullish in silk and believe that with prospects for the fall season in both hosiery and dress fabrics very bright, such manufacturers will have to take on sufficient silk in the coming weeks to keep prices at their present higher level or even increase them further. It is expected that consumption during July will run above 42,000 bales and may approach 43,000 to 44,000 bales. Observers anticipate a 5 per cent increase in the Japanese crop, based on the assumption that the latest official crop estimate will again prove about 4 per cent below the actual crop. In addition the Chinese and Italian crops are likely to show some increase over last year.

Like the well-known duck's back, your hosiery or piece goods repel water after a Laurel Splashproof treatment —the new splashproof, waterproof and non-coating finish which adds the extra life and service your trade demands.

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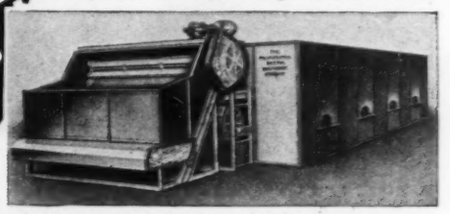

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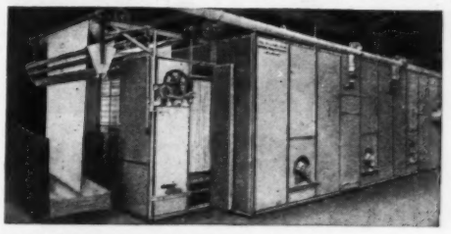
Forces air THROUGH the stock under extremely high pressure. Faster, more thorough, uniform drying. Greatly increased capacity, and reduced production costs



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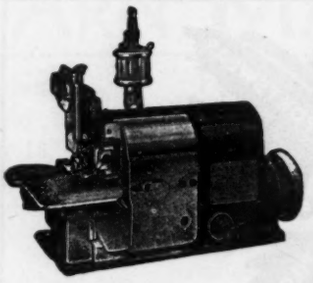

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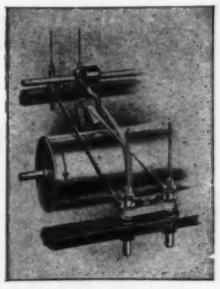

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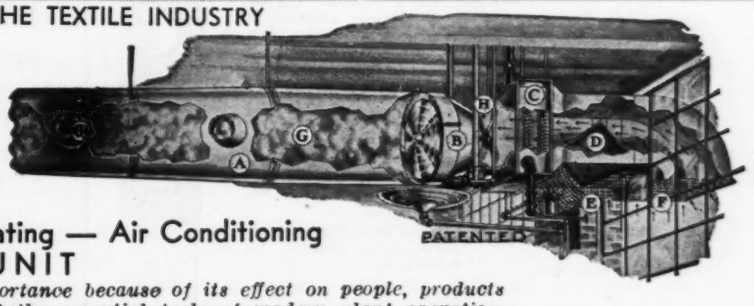

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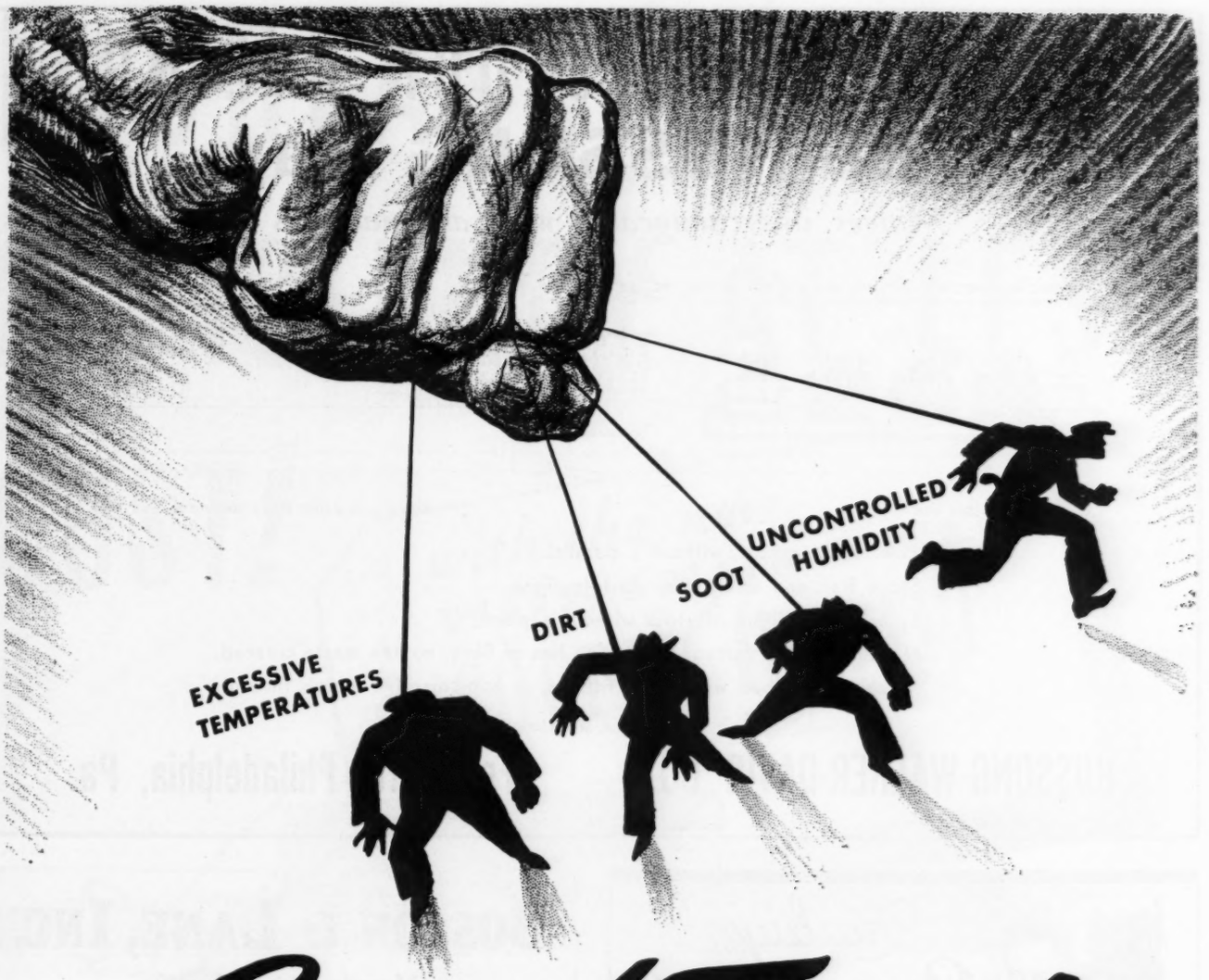

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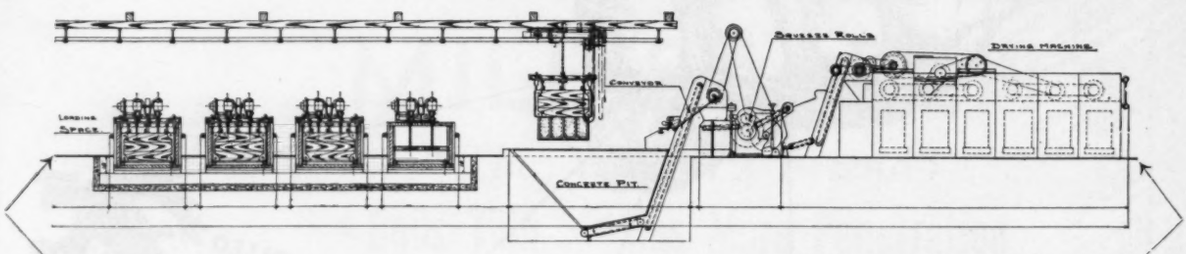

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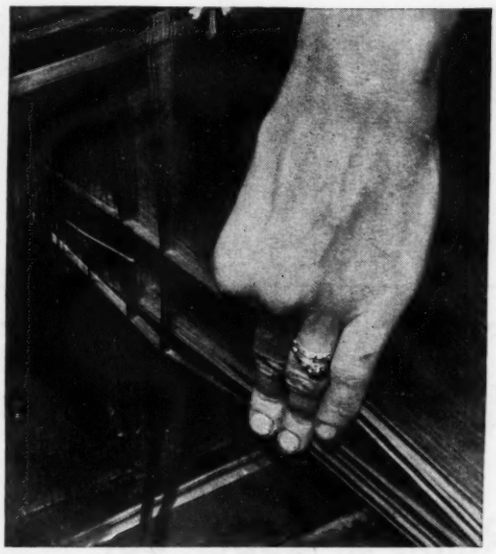

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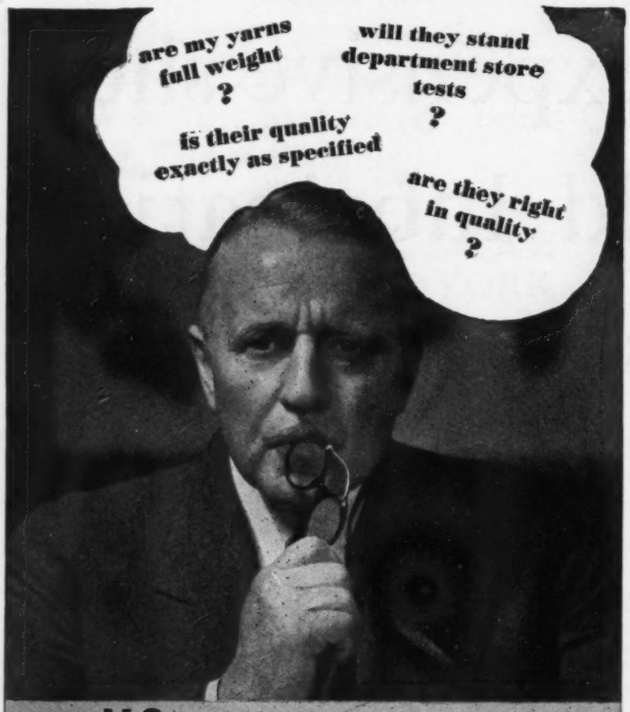
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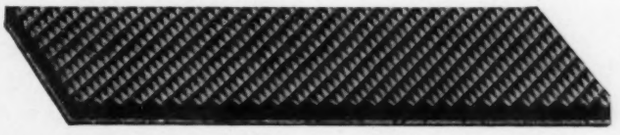

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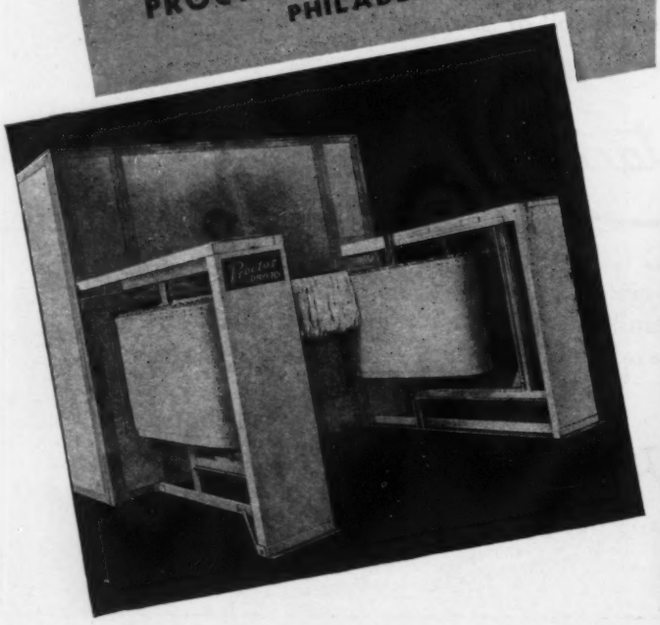

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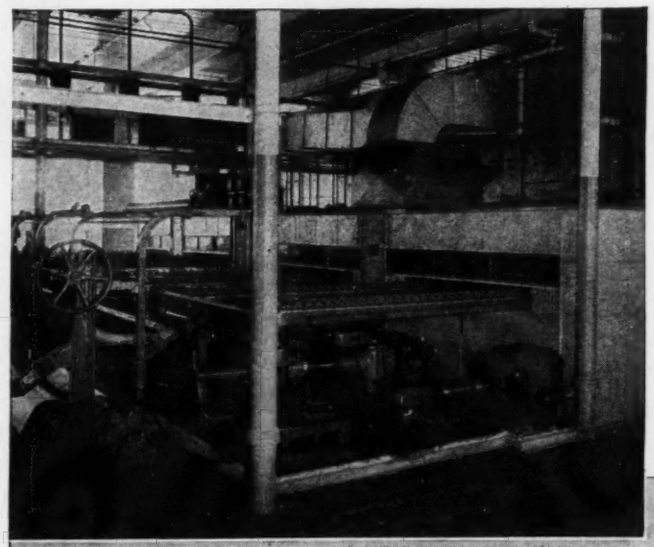
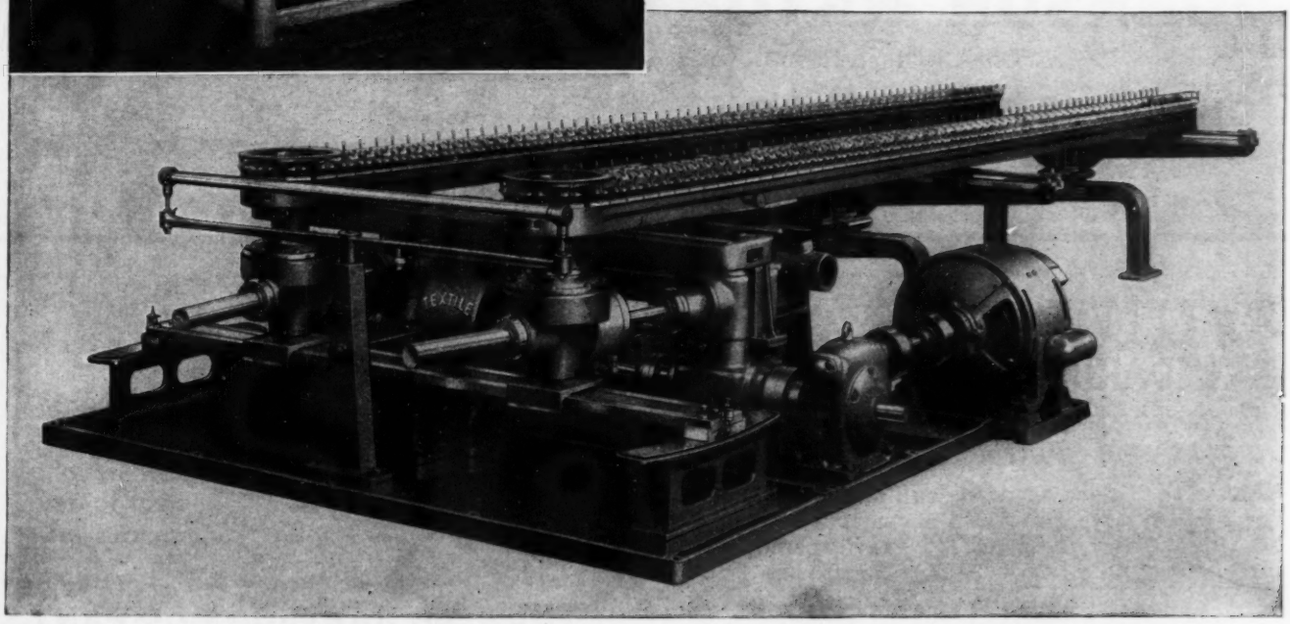


Textile's NEW BALL BEARING EQUIPPED SWING TENTER



Designed along the same lines and containing a majority of the patented features of Textile's Automatic Straight-away Double Beam Tenter, this New Ball Bearing equipped Swing Tenter affords smooth high speed operation completely meeting the desires and expectations of finishing plant executives.

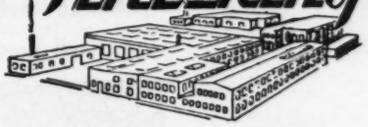
The outstanding feature of this new machine is the individual drive of the swing beam motion, permitting the independent operation and speed control of same over wide limits. It has been found possible to operate the Fabric Travel or Forward Motion of the Tenter at speeds unequalled on previously designed machines of this type.

The drive has been so designed in relation to the swing motion as to obtain a uniform travel of the goods at all positions of the swing thereby providing uniform tension and finish on all parts of the goods.

The illustrations show a battery of Textile's New Swing Tenters in an outstanding New England Finishing plant, also a close-up of the delivery end or driving head section.

FOR ADVANCED DESIGN IN FINISHING MACHINERY CONSULT "Textile"

The Textile Finishing Machinery Co.



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Manufacturers of Machinery for Bleaching, Mercerizing, Dyeing, Drying, Printing, Finishing and Sanforizing Textile Fabrics

ALL OVER THE U.S.---

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In every important center of the textile industry Johnson Sizers are depended upon for steady quantity production of high quality rayon warps. Johnson Sizers are in use in

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More Than Seven Times As Much Rayon Is Sized Today On

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As On All Other Rayon Sizers In the World Combined.

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STANDARD RING TRAVELERS

BEST MEET THE SPECIFIC REQUIREMENTS FOR SPINNING AND TWISTING

THE BOWEN PATENTED BEVEL EDGE TRAVELER
VERTICAL OFFSET TRAVELER
FOR
EVEN SPINNING AND TWISTING
VERTICAL NE-BOW TRAVELER
FOR
SILK, RAYON AND FINE WORSTED YARNS. A TRAVELER THAT WILL NOT UNTHREAD. ESPECIALLY DESIGNED FOR LUBRICATING RINGS.

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Why use old worn out cloth covered wood Rolls, when the Lucas Scavenger Roll is available? The truest, longest life and most satisfactory Roll on the market to-day. Leading mills are using them exclusively. Samples in your size for the asking.

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Established 1866
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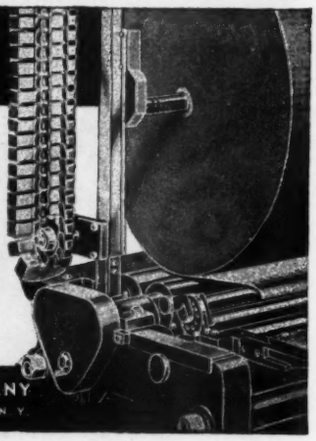
TYPE 44 W



A high-speed cloth Winder used in connection with bag printing presses, coating machines, and calenders. Has patented features assuring good roll production.

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61 POPLAR ST BROOKLYN, N.Y.

9 out of every 10

Pairs of Hose Are Dyed in SMITH-DRUM Machines

The best "sales story" for Smith-Drum Hosiery Dyeing Machines is the fact that they dye nine out of every ten pairs of stockings made in America. Such overwhelming leadership can mean only one thing . . . that Smith-Drum Machines are considered to be the finest obtainable. It is also significant that every major improvement in this type of machine has been pioneered by Smith-Drum engineers. The next time you consider the purchase of hosiery dyeing machines—just remember this convincing proof of superiority. For complete information write

SMITH-DRUM and COMPANY
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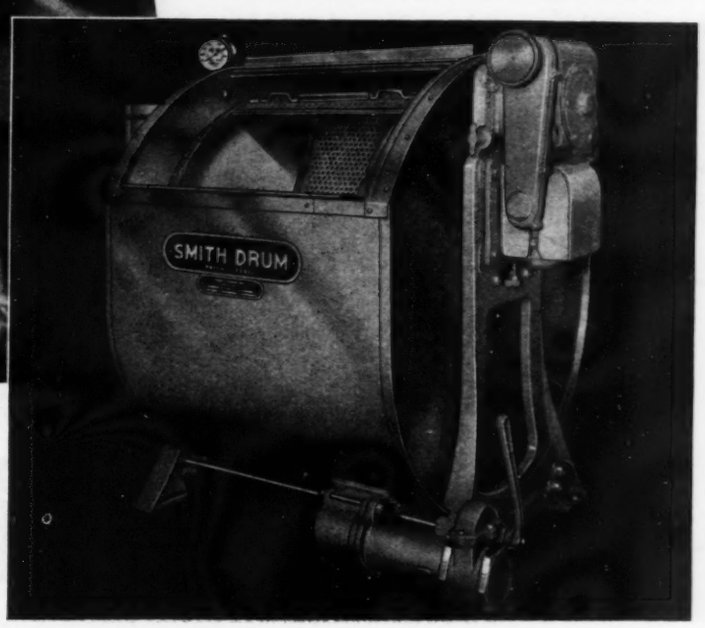

Illustrated is the advanced rotary type Smith-Drum Hosiery Dyeing Machine. Also available in paddle type. The Smith-Drum Line also includes machines for skein dyeing, piece goods dyeing, package dyeing, skein mercerizing, warp mercerizing, hosiery inspection and hosiery thread cutting.

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TENSIONLESS

Progressive plants, specializing in highest quality dyeing, are using an increasing number of these dye jigs because they have found it gives excellent results on acetates and other synthetic fabrics that are harmed by tension. It allows the use of higher temperature dye liquor without distortion. Result: better quality and faster production.

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This machine can do a real job for you. It is truly tensionless—both rolls are driven. It also is designed to give constant cloth speed. If desired, automatic stopping and reversing equipment is available. There are definite reasons for the popularity of this machine. You should have full information and see it at work.

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Write or telegraph the factory. We'll do the rest.

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THEY last longer because they are reinforced at the places where ordinary parts break.
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SPINDLES meet all requirements of the modern mill. With improved methods of manufacture and the best materials to work with, we claim the best spindle on the market.

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Spindle makers for 105 years

MAINTENANCE PAINT COSTS HIT NEW LOW!

Economy of Du Pont System of paint protection hailed by mill executives

FROM du Pont laboratories have come revolutionary mill paints that are already setting new low cost records in many modern mills.

This new Du Pont System of Paint Protection includes paints that hide better, spread farther, cover better, *look* better and *last* longer. They save real money on paint overhead because they greatly lengthen the time between repaintings. They reflect more light, help workers cut down the number of seconds.

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PAINTS

FOR THE TEXTILE INDUSTRY

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The 4-in-1
PAY ENVELOPE
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...both give you

(1) A Social Security record
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Canvas **BASKETS AND TRUCKS**
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Shamrocks have many important features that add to their strength. Particularly important is their flexible, resilient spring steel frame and extra-heavy duck cover.

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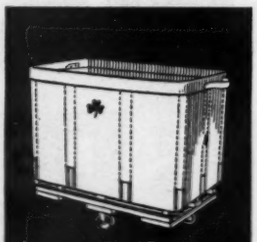

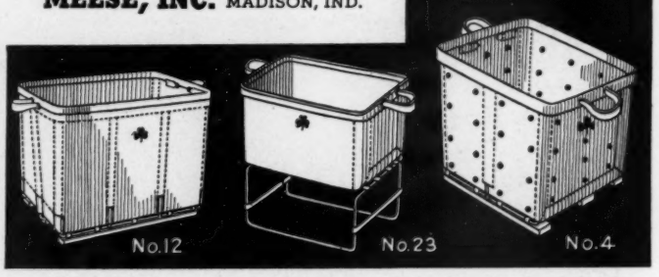

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LAPPINGS and BLANKETS
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SLASHER CLOTHS.
For Best results in Sanforizing use
KENYON'S ENDLESS WOOLEN BLANKETS

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20 years without a drink—

"First bought 'Arguto' bearings 25 years ago . . . still buy them because they're alright."
—unsolicited testimonial

ARGUTO OILLESS BEARING CO.
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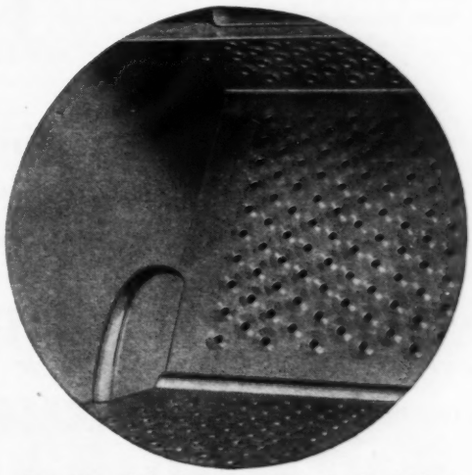
AS *Smooth* AS A ROSE PETAL

The soft touch of a rose petal could do no more harm to gossamer sheer hosiery than the silken smooth interior finish of the Monel Metal Cylinder of a Rochester Super Dyeing Machine. Wherever metal comes into contact with the hosiery, it has been hand-honed to an almost unbelievable smoothness. There are no invisible metal thorns to cause snagging and chafing—to make dyeing a profit-eating process. This is just one of the outstanding features that will make it profitable for you to investigate the Rochester Super Dyeing Machine. Write, Rochester Engineering & Centrifugal Corporation, 106 Buffalo Road, Rochester, N. Y.



A section of the inner surface of a Rochester Super Hosiery Dyeing Machine cylinder. Note the smooth "Silk Finish."

ROCHESTER ENGINEERING & CENTRIFUGAL CORP.

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Highly Recommended by Experienced Travelers the World Over for its Warm Hospitality; its Excellent Cuisine Served in Comfortably Air-Conditioned Restaurants; its Convenient Location to the Business Section; and its Unlimited Parking Facilities.

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You will enjoy living in Dinkler operated hotels

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IN NEW YORK for COTTON MEN

Executives of your industry have favored The Vanderbilt for years... here you will always find men you know...or wish to know. It is convenient for your business requirements . . . ideal for entertaining.

Spacious rooms with bath from
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The VANDERBILT HOTEL

Where Park Avenue Begins . . . at 34th Street
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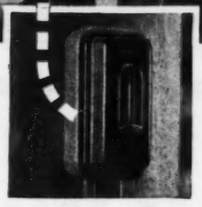
JOHNSON CONTROLS WILD STEAM



Interior of spinning room, Exposition Cotton Mills, Atlanta, Ga. Robert & Company, Atlanta, Ga., consulting engineers. Temperatures controlled throughout by 35 *Johnson* room thermostats operating 73 *Johnson* all-metal diaphragm valves on pipe coils.

AUTOMATIC CONTROL SAVES FUEL-and that's not all!

"Wild steam" wastes fuel, but it also overtaxes humidifiers, dries out the cotton. Weakened cotton means more waste in lint, more ends falling onto spinning frames, more loom stoppage. Mill operators realize the gravity of expensive delays. Stop these losses with *Johnson* control!

At no cost to you, a *Johnson* sales engineer will make recommendations for automatic control of pipe coils, unit heaters, humidifiers, air conditioning, and process work. Maintain the proper temperature, and humidity for every operation and save 20 to 40% on fuel alone! Johnson Service Company, Milwaukee, Wisconsin. Branch Offices in Atlanta, Ga., Greensboro, N.C., and all principal cities.

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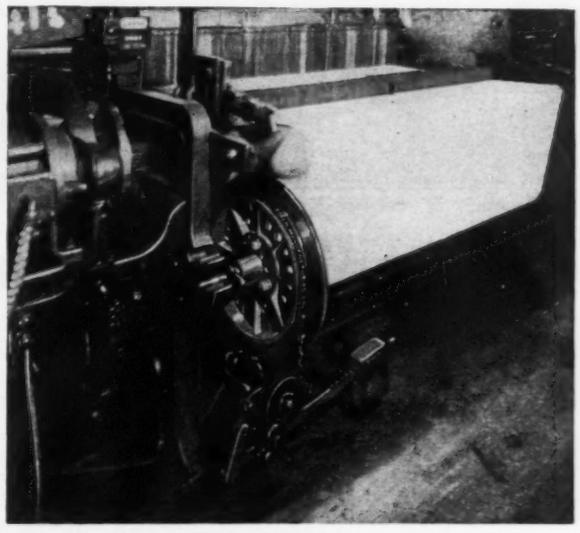
AUTOMATIC TEMPERATURE AND HUMIDITY CONTROL
For Heating - Cooling - Ventilating & Air Conditioning Systems

how to get UNIFORM WEAVING



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IN REDUCED SECONDS, ALONE, one Mill Executive reports a saving of $1900.00 on a $400.00 investment from F-M-C Loom Let-Offs. And these asbestos friction let-offs will help you to the same savings—will reduce your seconds, will give you smooth, uniform let-off, will cost you less per yard, will reduce loom stoppage and bad start-ups. With this modern, positive let-off, you can forget troublesome and "messy" oil and graphite and antiquated chain, leather and rope methods. And F-M-C Let-offs are not affected by weather or climatic conditions. Cut down your weave room costs. Make more profit per yard of cloth. Try F-M-C Let-offs at our expense. They come complete and are easily attached.

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Write for FREE SAMPLES and PRICES, TODAY!
OVER 75,000 NOW IN USE!

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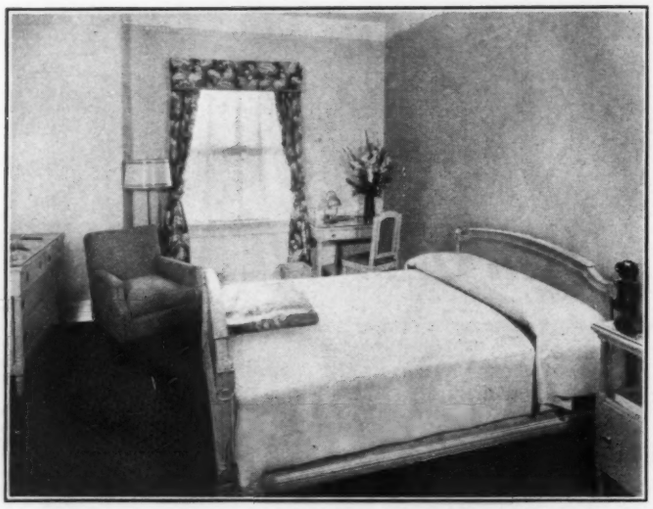

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Directions for sound sleep: snuggle between the snowy white sheets of any bed in the McAlpin . . . relax upon a deep, soft mattress . . . let its luxury soothe your body into refreshing slumber.

Your COMPLETE comfort was our first consideration when planning the equipment of the beautiful NEW rooms at Hotel McAlpin.

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$2.50 Single $4.00 Double $4.50 Twin-Bedded

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Air-cooled guest rooms, public and private dining rooms, lobbies, meeting rooms, ballrooms, coffee shop and barber shop will assure you complete comfort during your summer days in Chicago.

The Stevens Hotel offers the greatest amount of air-cooled area of all of the hotels in Chicago. Enjoy this crowning touch to the surpassing comfort, the pleasant living always found at the Stevens.

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"WILL HOLD WATER"—
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That's what they're made for!

All our tanks are given the cold water, soapsud and air-pressure test to insure against leakage. Let us figure on your tank needs. Tell us your problems or requirements—Send your specifications or write for "Tank Talk"—No. 12-C.

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HELPS KEEP YOUR MACHINERY AT PEAK PERFORMANCE

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OIL DISTRIBUTING
BUSHINGS

Smooth, efficient performance of textile machinery under the strenuous high speed of rush periods, can be expected ONLY if their bushings are built to "take it."

Remember that 75% of all bushing breakdowns are due to insufficient or improper lubrication. The self-oiling feature of Moccasin Bushings eliminates the human element in forgetting to oil bearings not to speak of dangerous hand-oiling in close places, or the great waste of oil. They need attention only two or three times a year. They will not drip or throw oil. AND THEY LAST — users have told us that their Moccasin Oil Distributing Bushings are still not worn after ten years use.

Full data sent gladly on request. Write today.

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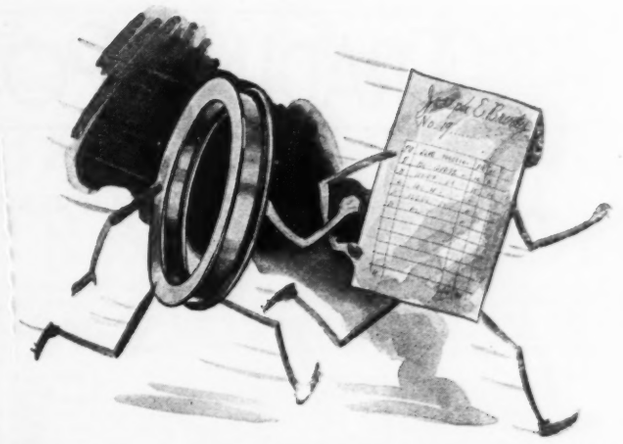
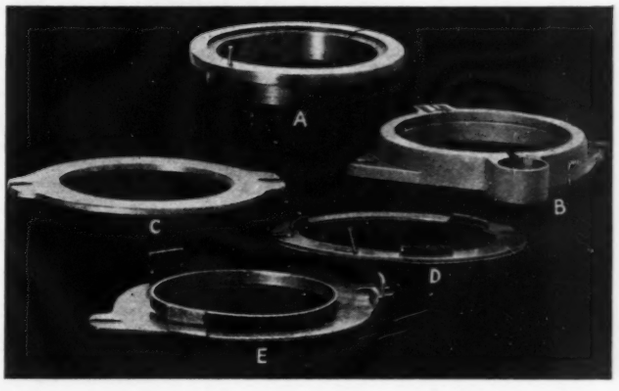
Makers of Brass and Bronze Bars and Castings of Every Description.



A race you don't want to lose!

Don't let your labor cost run away from production. Offset the rapid rise in wages, by stepping up your machinery to peak efficiency. The simple step of replacing "good-enough" rings with new high-polish DIAMOND FINISH, frequently adds 10% to 15% to the amount of yarn a spinner can tend with the same or less effort per day.



All kinds of Ring Holders

Above are shown: A. Cast iron holder with pin traveler cleaner. B. Die cast holder for self-lubricating ring. C. Brass holder for band ring. D. Pressed steel holder with traveler cleaner. E. Pressed steel holder for bar traveler ring. The fact that DIAMOND FINISH holders are made by ring-makers, is your assurance of receiving the proper fit and size.

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Makers of Spinning and Twister Rings since 1873

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will produce results at small cost. Do you desire a position? Do you desire a good man to fill a vacancy in your mill? Do you desire your business or professional card placed before the textile industries?

Why not try an advertisement on this page of COTTON? Its 11,000 copies per month reach the textile executives, superintendents and heads of departments throughout the industry.

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POMONA TURBINE PUMPS

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THE IDEAL METAL
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CORROSION RESISTANCE
in the
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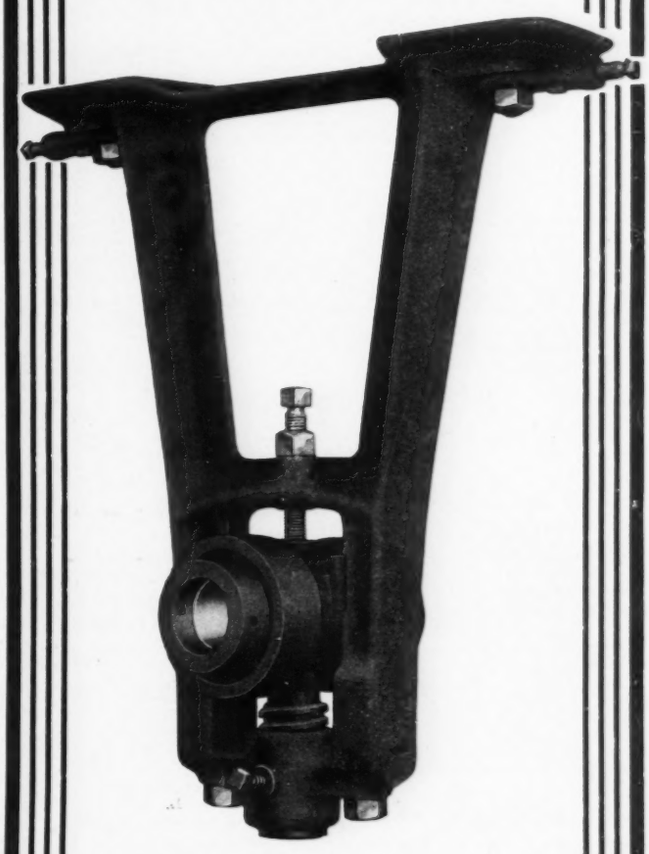

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